



LIBRARIES

UNIVERSITY OF WISCONSIN-MADISON

Public documents of the state of Wisconsin ... for the fiscal term ending September 30, 1898. Volume II 1896/1898

Madison, Wisconsin: Democrat Printing Company, 1896/1898

<https://digital.library.wisc.edu/1711.dl/TJFZNAHKAVSID8B>

Based on date of publication, this material is presumed to be in the public domain.

For information on re-use, see

<http://digital.library.wisc.edu/1711.dl/Copyright>

The libraries provide public access to a wide range of material, including online exhibits, digitized collections, archival finding aids, our catalog, online articles, and a growing range of materials in many media.

When possible, we provide rights information in catalog records, finding aids, and other metadata that accompanies collections or items. However, it is always the user's obligation to evaluate copyright and rights issues in light of their own use.

WISCONSIN STATE LIBRARY
PUBLIC DOCUMENTS

OF THE

STATE OF WISCONSIN

Being the Biennial Reports of the Various State
Officers, Departments and Institutions,

FOR THE

FISCAL TERM ENDING SEPTEMBER 30, 1898.

VOL II.



MADISON
DEMOCRAT PRINTING COMPANY, STATE PRINTER
1899

PUBLIC DOCUMENTS, 1897-98.

CONTENTS OF VOL. I.

1. Message of the Governor.
 2. Report of the Secretary of State.
 3. Report of the State Treasurer.
 4. Report of the State Superintendent.
 5. Report of the Railroad Commissioner.
 6. Report of the Regents of the University.
 7. Report of the State Board of Arbitration.
 8. Report of the State Board of Control.
 9. Report of the State Board of Agriculture.
-

CONTENTS OF VOL. II.

1. Report of the Commissioner of Labor Statistics.
2. Report of the State Supervisor of Inspectors of Illuminating Oils.
3. Report of the Regents of Normal Schools.
4. Report of the Commissioners of Public Lands.
5. Report of the Commissioners of Fisheries.
6. Report of the Trustees of the Milwaukee Hospital for the Insane.
7. Report of the Adjutant General.
8. Report of the Quartermaster General.
9. Report of the State Library Commission.
10. Report of the Committee to Investigate the Railroad Companies.
11. Report of the Commissioners of the Geol. and Natural Hist. Survey.
12. Report of the Inspector of the Department of Public Lands.
13. Report of the Forestry Commission.
14. Report of the Board of Prison Labor Commissioners.
15. Report of the State Conference of Charities and Corrections.
16. Report of the State Board of Immigration.
17. Report of the Dairy and Food Commissioner.

J
902

WISCONSIN STATE LIBRARY

1870

WISCONSIN STATE LIBRARY

EIGHTH BIENNIAL REPORT

OF THE

BUREAU OF

Labor and Industrial Statistics

**STATE OF WISCONSIN,
1897-1898.**

HALFORD ERICKSON, Commissioner.



MADISON
DEMOCRAT PRINTING COMPANY, STATE PRINTER
1899



LETTER OF TRANSMITTAL.

BUREAU OF LABOR,
INDUSTRIAL AND CENSUS STATISTICS,
MADISON, WIS., September 30, 1898.

To His Excellency HON. EDWARD SCOFIELD,
Governor of Wisconsin.

DEAR SIR:—I have the honor to transmit herewith the Eighth Biennial Report of the Bureau as required by the laws of this state.

Very respectfully yours,
HALFORD ERICKSON,
Commissioner.

TABLE OF CONTENTS.

Introduction.....	PAGE. i—xiv
PART I.	
Cost of production of wheat, oats, rye, barley and corn.....	1—196
PART II.	
Factory inspection, child labor.....	197—554
PART III.	
Manufacturers' returns.....	555—701

INTRODUCTION AND RECOMMENDATIONS.

The present is the eighth biennial report of this bureau as required by law.

The volume includes three separate parts. The first of these relates to the "Cost of Production" of grain and to the relation of this cost to the "Value" of the products. The second part deals mostly with the "Factory Inspection" and the condition of factories and workshops with reference to the factory acts. The third part relates to Manufacturing Statistics of this state and presents comparisons between the returns for the years 1896 and 1897. These returns were obtained from identical establishments and, being prepared on the same basis, show the increase and decrease in the different elements in the industries into which they were classified.

The material for part I. was obtained upon schedules and personal letters from farmers in all parts of the state. Over 3,000 returns were received. Of these 1,510 schedules or those which appeared the most complete and reliable besides the information obtained through hundreds of other inquiries were used as a basis for the computations presented in the tables.

Generally speaking the share of the farmer in the products he raises consists of the difference between their cost and value to him. To the farmers the amount of this difference is of the greatest importance. When large his income is also comparatively large and this enables him to expend more on himself and his family for personal comforts. When small he has less to expend for these purposes. On the farm as in other productive industries the economic condition of the producer is therefore largely determined by the margin above the expenses of production, or in other words, by the relation of the cost of production to the selling price of the products. It

was the original purpose of this investigation to show this relation.

The relation of cost and value of a product or class of products is not easy to find. Particularly is this true of farm products. Among the reasons for this are, a very obvious lack of official data relating to it and the fact that comparatively few farmers keep accurate accounts. Of the official bureaus, only very few seem to have made any efforts to obtain data of this nature. There is not even any fairly complete classification of the expenses involved. Most farmers carry their accounts in their hats and the data wanted is not always accessible. The importance of such data, however, is unquestioned and the present is an effort to contribute a little in this respect.

In entering upon this investigation two methods suggested themselves. One was to obtain the total expense on each of the farms included, in raising the entire crop for that year. The other was to find the cost and value of each crop separately. The first method would involve less labor, but as accurate accounts are not always kept it was found impracticable. The latter was therefore adopted. If completely carried out this would also prove the most satisfactory. The labor required for presenting each crop in detail, however, was found to be so great that it became necessary to limit this effort to a few crops only. Of the crops included, however, the presentations are complete.

During the past decade much has been said about the condition of the American farmer. While what has been said in this connection is not entirely one sided, most of it tends to show that there is a general depression in agriculture or that the farmer's lot is a hard one. In most cases, this conclusion seems to have been drawn from the prevailing low prices of grain. The prices of this period have usually been brought into comparison with prices of preceding periods and the difference pointed to as absolute proof not only of the fact that a depression exists, but also of the extent of this depression.

While the average price of grain during this period has ranged very low and while many farmers have suffered greatly

in a financial way therefrom these facts alone do not prove, by far, that there has been or is a general depression in agriculture. In the first place all farmers do not depend upon grain raising alone. In fact the greater proportion of them have long ago substituted this by other branches of farming such as truck, fruit, or mixed farming and cattle raising. This change has also proved advantageous and is steadily progressing. The farmers are as quick to see and grasp new opportunities as any other class. Exclusive grain-raising is now confined to the farmers in a few of the western states only. Those who are engaged in dairying and cattle raising may even be directly benefited by low prices of grain, particularly of such as are used for feed. Low prices of grain alone can therefore, at most, only effect localities where this is largely or exclusively raised or depended upon. At any rate they are inadequate as a basis for conclusions regarding the agricultural condition as a whole in this country. By the readers of this part of the report this should be steadily borne in mind.

The prevailing low price of grain is also largely offset by a reduced cost of production through improved machinery and methods, as well as through lower transportation charges. The combined reduction through these sources may not be as great on the whole as the fall in prices, but it certainly goes a good ways to offset any loss that may have occurred to the farmers from this source.

The data upon which part III. is based was obtained from manufacturers. The number of establishments from which complete returns were received for each of the two years covered or compared was 1,499. In the presentation of this data as well as in its classification as to industries the plan used by the bureau of Massachusetts for its report of manufactures for that state was, as far as possible, followed. The reasons for adopting this plan are several. In the first place it represents the result of years of experience in statistics of this kind by the most completely organized and efficient state bureau in this country and has apparently proved a success in every respect. Then again, since the data covers almost

exactly the same facts, it will enable comparisons between like industries in the two states. The real purpose of this investigation is to show the trend and volume of business for each year covered and to establish a basis for future work along this line.

During the past two years the bureau through its inspection of factories has made special efforts to enforce and carry out the various provisions in the factory acts. While it has been found impossible to meet every requirement in this respect a great deal has been accomplished. From Feb. 1, 1897, to Sept. 1, 1898, 2,463 establishments occupying or using 7,228 separate buildings; 69 hotels; 548 churches; 330 schools; and 68 assembly halls, or a total of 8,240 buildings received more or less attention. In fact, many of those factories in which children are employed were inspected six times during this period. Counting each additional inspection as one and including other buildings than factories on the same basis the number of separate establishments inspected number 4,943.

Part II. of this report has been devoted to the "Factory Inspection" and embraced the reports of the work done and facts gathered at 3,713 separate inspections. For convenience these reports or inspections were classified as "General and Special" according to their nature or scope. The "General" inspections include a report for each one of the 3,498 establishments inspected showing their condition with reference to the various provisions in the factory laws. The "Special" inspections relate entirely to child labor and includes the reports of 3,360 children 16 years or under who at the time of inspection were employed in 215 factories. Of all other inspections the reports could not be included.

During the period covered above 1,292 changes or improvements were ordered. Of these 1,021 affected the conditions in factories and workshops including the dismissal from work of 327 children who were found to be under 14 years of age; 51 related to hotels, etc.; 121 to churches; 81 to schools; and 18 to assembly halls, etc. These orders have also been presented in detail as well as analysed in connection with the re-

ports. Since the closing of this report, or between Sept. 1, 1898, to Jan. 1, 1899, over 250 violations of the child labor law alone besides a large number of violations of the other acts have received attention, and the provisions covering them enforced. Full reports of these cases, however, could not be presented here.

Part II. thus shows the greater part of what has been accomplished in the factory inspection department of this bureau during the period given above. What has thus been done, however, does not include all that ought to have been done. While our two inspectors have been kept at work steadily and have received help from other sources the duties of this department are so many and require so much labor that it has been found impossible to fully perform all of them. Many places, particularly where children are employed, it has not been possible to inspect or visit as often as necessary. Many inspections have also been less thorough and many provisions enforced with less vigor than ought to have been the case. More inspectors therefore are needed. In the interest of the wage-earners as well as of the state a law providing for an increase in the number of factory inspectors should therefore be enacted.

In order that these duties may be better understood further explanations are necessary. They embrace the enforcement of the provisions relating to the labor of children under 14 years of age; to safeguards around bull and fly wheels, tumbling rods, shafting, gearings, belting or dangerous machinery of any kind; also around vats, pans, or other structures containing molten metals or hot liquids; and hatchway, elevator, stair and other openings so located as to be dangerous to workmen and others; the communication between engineer and workrooms; the inspection of passenger and freight elevators in factories, storehouses, office buildings, hotels and other buildings; to sanitary regulations in general in all buildings mentioned herein; to fire escapes on factories, etc., more than two stories high in which twenty-five or more persons are employed, and on office buildings, storehouses, hotels and boarding houses more than two stories high and containing offices,

theaters, assembly halls, workrooms and sleeping apartments designed for the occupancy of twenty-five or more persons; the posting of notices in the various places inspected; the employment of women and minors; the outward swinging of doors on the buildings mentioned above including churches; and to various minor provisions.

Generally speaking, therefore, the duties of the factory inspectors may be said to consist of enforcing the laws which regulate the condition of labor in factories and workshops and provide for the protection against accidents from fire, and from the use of elevators in factories, office buildings, schools, assembly halls, churches, hotels, etc.

While this includes most of the more important duties of the factory inspectors it does not give those who are not familiar with them, any adequate idea of the amount of labor required to properly perform them. Even the detailed reports of the inspectors themselves fail to do this. The reasons for this are found in the nature of the labor required. No provisions for instance can be enforced without preceded by a careful inspection. The inspectors must not only discover the cases where the laws are not complied with but prescribe the remedy, and see to it that the changes ordered are carried out. All this requires a careful study of the situation in each case and this in turn takes time. Particularly is this true of provisions which relate to the labor of children under 14 years of age, to dangerous machinery and to the sanitary conditions. Single violations in any of these cases often require days, if not weeks, of systematic effort to establish and correct.

As said, the provisions that no child under 14 years of age shall be employed in factories and workshops unless upon a special permit are among the most difficult to enforce. The real reasons for this may be traced to the pressure and means adopted on the part of the parents and others to obtain employment for their children and to the lack of proper precautions or desire, to prevent such employment on the part of the employers. Many parents are so anxious to find work for

their children that they do everything in their power to evade the law. Not only are the children taught how to deceive the inspectors as to their age, but are furnished with documentary evidence in the form of certificates, etc., for this purpose. The position of the manufacturers is, in many cases, little better than that of the parents. While not directly, perhaps, encouraging the evasion of this law they seldom require absolute proof of the age of the children before hiring them. The result of their failure to exercise proper care in such cases, is plain. On the whole, the employers are always in position to protect themselves from imposition of this kind. Any failure to do so makes them, at least partly, responsible for resulting violations. Since it became generally understood that serious efforts were made to enforce these provisions, the methods mentioned have among others been resorted to for the purpose of misleading the inspectors in practically every case when the children in question appeared to be under 14 years of age.

All concerned thus conspire to deceive the inspectors or throw them off their guard. As the inspectors cannot safely take action without being in position to prove their case they are forced to look elsewhere for the evidence necessary. The appearance of the children is, at best, an unsafe guide as to their age. With the names and addresses of both the children and their parents, official and school records may be examined. This is also, in most cases, the course taken. As to the official birth records, these are always defective and of little help. School records on the other hand, particularly those kept in private and parochial schools are always complete and, when accessible, furnish the necessary data. While thus, in one way or another, the facts wanted are found, the methods necessary to this end are roundabout and require more time than can be given without neglecting other duties.

To find appliances that will furnish necessary protection from dangerous machinery without greatly impairing its efficiency is also difficult. Improvements in the sanitary con-

dition and the erection of such fire escapes as are required by law are usually combined with considerable expense, and therefore resisted, or at least, under one pretext or another put off as long as possible. To enforce these and similar provisions, therefore require not only a thorough knowledge of the situation in each case, but constant pressure and attention. There are many other provisions which are as hard to enforce as those mentioned. The illustrations given, however, are sufficient to show their nature and the amount of labor necessary to perform these duties properly.

Besides the amount of labor thus involved in enforcing each one of the various provisions the number of such enforcements that must be made is also great. Including everything there are more than 5,500 separate establishments or places in this state that are affected by the factory acts. About 3,300 of these may be classified as factories and workshops. All other places such as office buildings, warehouses, hotels, etc., schools, churches, assembly halls, etc., number considerably more than 2,200. As on the average there are nearly three buildings to each factory establishment in this state this is equivalent to over 12,000 separate buildings which under the laws must be inspected for one purpose or another. The number of inspections required yearly for each building varies. From our experience in the past I feel justified in saying that, including everything, buildings in which children are employed should be inspected as often as once every two months; and other factory and other buildings at least once a year.

As there are fully 3,000 buildings in this state where children are or may at any time, be employed to a greater or less extent, the aggregate number of inspections needed yearly are not less than 25,000 a year. With only two inspectors, which is the number allowed under the present law, this is equal to 12,000 inspections a year for each inspector, or with 300 working days yearly, to 40 inspections daily for each. Including traveling, the making out of reports and other necessary work and delays it is safe to say, that under present conditions no one person can, on the average, inspect

thoroughly, more than five buildings daily. On this basis the present equipment of this department is only about one-eighth of that required in order to perform all its duties fully or completely.

From the facts thus presented it plainly appears that the amount of labor required to properly enforce the provisions in the factory acts is entirely out of proportion to the number of inspectors provided for that purpose, and that therefore it is absolutely impossible for this bureau with its present equipment to fully or completely enforce all the provisions in the factory acts. Realizing these facts we have during the past term given attention to the more important provisions first. While thus, by constant efforts, we have been able to accomplish a great deal, particularly in the way of keeping young children out of factories and in school, many provisions which in the interest of society should be enforced have necessarily received only slight, if any attention.

As to the necessity of factory laws and their enforcement little need be said here. The experience under the factory system both in this country and Europe has amply demonstrated that under competition alone the best results to society as a whole could not be obtained. Competition has proved to be only one of the forces necessary to that end. Legal restrictions and regulations were also found necessary and this has led to the enactment of the so-called labor or factory laws now in force in all manufacturing states and countries.

It is thus to the best interest of the state that all these provisions should be promptly and fully enforced. With two inspectors only, for this purpose, this is not possible. I therefore regard it as my duty to recommend that a law be enacted authorizing the appointment of additional factory inspectors.

Also recommend that the law regulating the labor of children be so amended as to require all employers of such labor to procure and keep on file, for the inspection of factory inspectors, a certificate under oath for each child sixteen

years of age or under employed in any factory or establishment operated by them.

As in the past I desire to acknowledge my thanks and obligations to Mr. Chas. Lewiston, deputy commissioner, and to all other officers and employees of this bureau for their hearty cooperation and faithful services in this work.

HALFORD ERICKSON,

Commissioner.

PART I.

—

COST OF PRODUCTION.

COST OF PRODUCTION OF WHEAT, OATS, RYE, BARLEY AND CORN.

The purpose of this investigation is to ascertain the relation of the cost of production of wheat, corn, oats, rye and barley to the value or selling price of these products.

By the cost of production is here meant the expenses or outlay of the farmers in producing the crops. These expenses consist of the value of all the materials used, such as seed, fertilizers, feed for horses, fuel in threshing, etc.; the amount due for labor at the ruling rate of wages in the different neighborhoods; the amount of the depreciation and interest on the capital invested in machinery, tools, horses, etc.; the rent of or interest on the value of the land used and incidental outlays.

By the "value or selling price of the products" is understood the actual price at which the grain was sold or paid for same in the local markets and the value of the straw and stalks, either for use on the farm or in the markets, as the case may be.

The material upon which this investigation is based was obtained from farmers throughout this state. That is, the farmers were requested to furnish such facts relating to the "cost of production" and "value of products" as were deemed necessary for the purpose in view. The information was secured through personal letters and inquiries and through printed schedules. The schedules were sent out first. Over 7,000 of them were distributed in different parts of the state. The inquiries they contained were intended to completely cover the scope of this investigation. All other inquiries were made later and chiefly for the purpose of throwing some light on points upon which the answers in the schedules were not

clear or satisfactory. Several hundred letters were thus sent out and the supplementary information obtained from the answers was used in completing or correcting the schedules.

The schedules were distributed in the early part of 1897 and the answers cover the year 1896 and in most cases also the four preceding years. Over 40 per cent. of the schedules were returned and of these, all those which were complete or could be made so from the supplementary information received, were used in the following tabulations.

Many precautions were taken to prevent the use of misleading returns or figures. In the first place the schedules were carefully prepared and intended to cover the ground fully. As the expenses which enter into the "cost of production" are the most difficult to ascertain the questions relating to them were so framed that the answers showed not only the total cost of each item or operation for a given area, but also the items from which each sum was computed. Thus, while in one part of the schedule, the total cost per acre of, for instance, plowing was given, another part showed the time required and rate of wages paid for man and team, of a given number of horses in it, to plow the area in question. This method, as is readily seen, greatly enhanced the value of the returns because it enabled us to test or verify practically every item of expense before including it in the tables. Then again only returns which proved complete and apparently correct, or could be made so by replies to a second request for information upon points not fully covered in the first report, were included. Each schedule was also carefully edited and in this way alone, many clerical and other errors were corrected. It appeared that the most efficient farmers also made the best reports. Since only the most complete returns were included it is therefore likely that the standard of efficiency of those whose reports were used is somewhat above the average. It is not thought, however, that this fact materially affected the "cost of production" per acre. As to the "value of products" the case is different. It need hardly be said that the best managed farms give, as a rule, the largest yields. Reports from such farms would therefore show more bushels to the acre than reports from less well managed ones.

Of course, there are exceptions to this rule, but it undoubtedly accounts for the fact that the yield shown here is considerably above the average. It is believed, however, that on the whole the data, which has here been used as a basis, is correct, or at least, as reliable as any that can be obtained by similar methods, and that, coming as it does from all parts of the state, it may be regarded as fairly representative.

To the farmer, in the sense in which these terms are used here, "cost of production" represents the outlays, and the "value of products" the receipts, in growing the crops included. Thus if the receipts are the larger there is a balance left which the farmers may appropriate for their troubles and risks. If the outlays amount to more than the receipts, he may lose both rent and interest and in abnormal cases even be compelled to do without any return for his own labor. Generally speaking, it is the hope of being able to keep expenses below the receipts, or of making profits, that makes men invest their capital and employ their abilities in farming as well as in other productive enterprises.

Of the above sums the outlays or the "cost of production" is from a statistical point of view the most difficult to ascertain. As already intimated the different processes of production, as well as other items which must be taken into account, are either of such a nature, or, so closely connected as a whole, that their cost for each of the crops raised can only be determined by detailed and roundabout inquiries. Such inquiries were made. Before describing them in detail a brief account relating in a more general way to the three factors of production, land, capital and labor, or to what elements of expense are here included under each of these factors, will be given.

Land: In the sense in which it is used in this investigation this term includes not only the land itself but also all permanent improvements that have been made upon it. Such improvements generally consist of drains, dikes, fences, buildings used for farming purposes or for living houses by the farmer and his family, and other items. While improvements on the land are not land or nature but capital, and should therefore be classed as such, this could not be done here be-

cause it was found that separate reports of the value of the land and of the improvements made upon it could not be obtained.

Rent of land was found to bear about the same relation to the value of land as interest to the value of the capital used in production. The fact, therefore, that the land and the improvements were classed together does not affect the total expense. This is also the reason why the expense for the use of land in the following tables appears as interest.

Capital: Besides land and permanent improvements on same, as classified above, the farmers must have the assistance of machinery, tools and horses in carrying on their work. These and similar means of production are usually termed fixed capital and the expense of same consists of wear and tear and interest upon their value. The farmers must also have seed, fertilizers, fuel, binding twine, etc., and enough cash capital to pay labor, taxes and other current expenses. Productive means of this kind are usually classed as circulating capital and as this is entirely used up in production it must be wholly replaced out of the products. The expense of circulating capital therefore consists of the replacement of, including interest on, the total amount invested. In this investigation all investments for such purposes as those pointed out have been treated as capital.

Labor: By this is meant only labor as understood or classed by economists or for which wages is paid. Efforts and troubles of superintendence therefore are not included in this term.

In growing, harvesting and marketing a crop of grain much labor is expended. On many farms this labor is furnished by the farmers themselves and by members of their own family. On others it is furnished partly or wholly by hired help. In either case this labor is entitled to wages at the usual rates for similar work in the neighborhood. The amount thus due as wages from this source constitutes a part of the expenses of producing the crop and should, with interest and compensation for management and risks upon it, be replaced out of the receipts from the crop. The fact that in many cases a part or all of the work is performed by the farmer himself

or by the owner of the land used for this purpose and of the crop in question, does not in any way reduce the expenses from wages because the farmer is just as much entitled to wages for his work as his hired man.

Among the farmers, however, those are few who do not find it necessary, at some stage in the progress of their work, to hire more or less extra help. The way in which help is hired varies greatly, and seems to depend almost entirely upon the circumstances in each case. Those who cultivate a great deal of land, and consequently use more labor, generally hire a given number of men by the year or season, and in addition to this, during the harvest, etc., as much extra help by the day or month as they find necessary. Those who have smaller farms, or with the assistance of the family are in position to do the greater part of the work, hire such additional help as they may need by the day or week. This method of only employing help for a few days at the time when most needed is, when possible, undoubtedly the best and most convenient to the farmers. But its effect upon farm labor is bad. It renders employment unsteady or uncertain in character and fosters a spirit of shiftlessness or unrest. As a result of the late depression, however, which largely increased the number of unemployed in the cities and forced them upon the farms, this method has of late years been much more common than in the past. The resulting increase in men seeking work has in most localities also depressed the rate of wages paid.

The methods of hiring also differ as regards board or maintenance. In some cases the board, lodging, washing, etc., of the employees are furnished by the employer. In others by the employees themselves. Instances of the former cases are, of course, the most numerous, owing mostly to the nature of farm work. Except in cases where the workmen have families and live in the neighborhood, board, etc., is mostly included when the men are hired for longer periods. When living in the vicinity and employed only a few days or weeks at the time the reverse is often the case.

While team work is not hired to any considerable extent, at least, when compared with other work, there was still enough of it done in almost all localities to enable us to obtain fairly

reliable data as to the wages paid for such work. As a rule team-work is only hired for short periods, seldom exceeding one month. Day work seemed to be the most common. It also appeared that the maintenance of the horses mostly devolved upon their owner.

The rate of wages paid, per day or month for men and for man and team, with or without board, etc., included, is shown in the tables. The rate adopted or used in computing the expenses, however, is that per day "without board." This rate was used because it was found the most convenient. The board furnished to hired hands is, for its cost or amount, as much of an expense as the wages paid them. Should the rate "with board" have been used it would have been necessary to include in the expense one more item—that of labor maintenance. As it was found that the difference in wages in the two cases corresponded almost exactly to expense of boarding their men, as placed upon it by the farmers, it is, of course, plain that the lower rate with cost of board added would bring the same results as the higher rate without board. Since thus the total expense would have been the same in either case, it matters little which of the two rates were used.

In order to be able to ascertain the expenses of the labor involved in production it was necessary, besides the rate of wages, to also find the amount of labor needed to grow and market a given area or unit of products. By properly adapting the schedules we succeeded in ascertaining this. The labor involved was classified according to its nature and the questions were so arranged that the answers showed in historical order the time needed for a given number of men, or if team work, of men and teams, to perform each of the different parts or classes of the work from the time of plowing until the grain was marketed. The schedules were distributed early in the spring before work had begun. By some, those who kept records or books or had other means of determining the answers, they were returned at an early date. Others, mostly those whose facilities for correct answers were more limited, kept the schedules throughout the seasons, making observations as the work progressed and when through, reported the results. Conditions were therefore fav-

orable for correct answers. And we have the best of reasons for saying that the data in the returns used is reliable.

Statistics of the cost of production in other branches of industry are generally considered practicable and there can be no good reason why the same cannot be said of farming. It is, perhaps, true that less efforts have been made from official sources to obtain figures relating to the cost of growing crops than to the cost of manufactures. This, however, may be due more to the fact that such statistics of manufactures are considered of greater importance than to any idea that they cannot be successfully extended to farming. But whatever the cause is the expenses of raising grain can certainly be ascertained. The farmers have less reasons for concealing important facts bearing upon the cost than the manufacturers and are fully aware of this. The amount of capital and labor involved can be measured with almost as much accuracy as in manufacturing. The accounts of a few farmers who favored us with their inspection bore ample evidence of this. It is true that many who cultivate small farms neglect to keep accounts, but it is also true that in such cases there is less need of bookkeeping than in almost any other undertaking of the same size. Among successful and experienced farmers those are few who are not able with a moderate amount of time and effort to figure out and report almost the exact time needed for labor in raising grain. That there is some safe basis upon which the amount of work involved may be determined is plainly illustrated by the fact that land is often farmed on shares, that is, an agreement by which one party furnishes land and perhaps machinery, and the other labor, etc., in growing a crop, each party to receive a certain portion of the yield in return for his investment.

The expense of labor has therefore been computed from the time involved and the rate of wages paid.

The different items of expense which enter into "cost of production" may now be described in detail.

Plowing: In the classification of the work of preparing the soil for seed, plowing has been placed at the head. This operation involves considerable labor on the part of both man and team. The method of plowing differs somewhat

with the character of the soil, the size of the field or farm, etc. In some places hand plow and two or more horses are used, in others gang plow and four or more horses. One plowing has been charged to each crop. In the tables where wages was allowed for team work, the expense of plowing was computed from the time required and the rate of wages paid for man and team. In the tables where horses or the value of the same was treated as machinery or capital invested the expense was computed from the time needed and the wages paid for one man only. A comparison of the expenses under the two methods will reveal the fact that the cost is lower when horses are treated as capital invested.

Harrowing, etc.: Under this head is included all such work as disking or harrowing, dragging, rolling, etc., or the work necessary to prepare the plowed field for the seed as well as dragging after seeding where this is practiced. From two or four horses are usually needed in this work depending upon the kind of harrow or tool used. The returns developed the fact that more care is taken in the preparation of the soil for corn than for grain, for instance, for corn the fields were harrowed nearly four times over while for grain the average number of times over was somewhat below three only.

Seeding and Planting: This includes all the work of all kinds required in properly putting the seed in the soil. The terms seeding and planting refer to grain and corn respectively. In all cases of seeding grain, machinery—seeders or drills—with horse power were used. Corn was also planted with so-called horse planter except in a few isolated cases in which hand planters were used. From two to three horses are usually needed to each seeder and one or two to each planter.

Cultivating: This term applies only to corn and includes all the labor involved in cultivating and keeping the corn clean and the soil loose from the time of planting, until it is so far advanced in growth that no further care is needed. Besides dragging in the early stages and some hoeing from time to time corn is ordinarily cultivated from three to five times during the season.

Cutting: In the case of grain, all the work of cutting same when ripe or ready for harvest is included in this item. This work was in all cases done with binders each requiring from two to three horses. In the case of corn it includes the work of cutting, binding and of placing the bundles in shocks. Corn was mostly cut by hand though binders are rapidly being brought into use. When cutting by hand one to one and one half acres was found to be a good day's work. With binder four to six acres were usually cut in one day. When binder is used, however, there is need of at least from one to four extra men depending upon the kind of harvester used.

Husking, etc.: In this item is included the work of husking and cribbing the corn. When cut and put up in shocks or stacks husking is invariably much slower work than when standing in the field. The larger expense, however, of husking from the shock is more than counterbalanced by the great value of the stalk for fodder when cut up and properly cared for. Where cattle are raised—as is the case on practically all farms in Wisconsin—the interest of the farmer lays in cutting the corn before husking, and as this was mostly practiced by those reporting, the expense of husking comes quite high. When husked standing a day's work becomes nearly twice as effective and the expense of cutting is eliminated.

Shocking: This includes the work of putting up in shocks preparatory to hauling away and stacking of all the grain or sheaves as left by the binder. In a few cases this work was reported dispensed with, the grain being hauled directly to the stack or machine; but instances of this kind were so few in number as not to materially effect this item of expense.

Stacking: The grain is usually stacked in some place convenient for threshing, and this item includes all the work connected therewith. The expense of this depends somewhat on the distance of hauling. Usually two men are needed to each team.

Threshing: This expense consists of the labor involved, and of the amount per bushel paid for the use of the thresher and engine. From 16 to 20 men are usually required to each engine, the wages of four of which are mostly paid by the

owner of the engine, while the wages of the balance are paid by the farmer.

Marketing: The expenses of this item are based upon the time required to haul—including loading and unloading—the products from the farm to the market or place where sold. As the products are practically all sold at the nearest railway station or home market, freight charges do not enter into this expense.

Taxes: This item includes the amount paid out in taxes on land or other property used in production. The amount per acre was arrived at by dividing the amount paid last year with the total number of acres in the farm.

Seed: This item includes the cost of the grain used for seed. This expense is based upon the quantity used and the price of same. It will be noticed that the price of seed foots up to quite a sum. In the case of corn it is very small.

Maintenance of horses: When wages are paid for team work, maintenance of team is included in the wages paid, and enter into the expense of production in the form of higher wages. When horses or their value are treated as capital invested in machinery or motive power, and depreciation and interest are allowed on their value at a certain percentage, maintenance becomes a separate item of expense and as such enters into the expenses of production. When treated as a separate item, it may, of course, enter into the expense in many different ways. The total maintenance for the year of all the horses needed for the work on the farm may be charged up to the total product, or it may be divided equally either among the total acres under cultivation or among the total acres in the farm, etc. For the purposes of this investigation the latter method has been used except when wages was paid for team work. The reasons for this are that it was considered the most convenient as well as the most just method. By dividing the total yearly expense among the total acres in the farms the expense per acre was easily ascertained. The horses are seldom used for anything but farm work. The expense of their maintenance therefore must be borne by the farm, and as the land not under cultivation also shares in their work, as a rule, it

is only fair that it should also share in the expense of maintenance.

Fertilizing: The productive power of the soil is mostly kept up by the rotation with clover and the application of barnyard manures. The expense from the use of clovers is small. Barnyard manures when produced on the farm cost but little more than the work involved in caring for it and of hauling and spreading upon the land. From two to three loads per acre seemed to be about the yearly product of manure. This item is later explained more fully.

Other expenses: In this item is included various expenses that are involved in production on the farm which could not properly come under either of the above heads. Among these expenses are the cost of binding twine, and fuel in threshing, also the expense arising from the loss of time through bad weather, etc. These expenses were by most farmers placed at 50 cents per acre. As their estimates were supported by what appeared good reasons they were adopted here.

Depreciation: By this is meant simply the wear and tear or using up of the fixed capital in production. The amount of this wear and tear must be replaced out of the receipts from the products and is therefore included in expenses. When horses, or their value, were treated as an investment, depreciation was also allowed on the value of horses. In each case the rate of depreciation as estimated by the farmers was, as a rule, accepted.

Interest on capital invested: This is an item of expense which must be met by the farmers. The capital consists of the amount invested in land, including permanent improvements on same, the amount invested annually in raising the crops, the amount invested in machinery and tools, and the amount invested in horses. The average rate on money secured by land was found to be a small fraction over 6 per cent., hence this rate was used. When wages was paid for team work interest was not allowed on value of horses.

Under one or the other of the above heads are explained the sources from which the expenses of producing the crops included are derived, and the method of computing these

expenses. With the exception of such outlays as may be found necessary to keep fences and buildings in repair and to cover insurance against fire, accidents, etc., also a sum for wages of superintendence or necessary profit, all expenses directly or indirectly incurred in growing the crops have been included. If the farmers are to come out whole, that is, get back the amount of their annual investment and over and above this, a sum equivalent to interest on same and to interest and depreciation of their fixed capital, the total value of the crops produced must in any event, be at least large enough to counterbalance the sum of these expenses. And if besides, the farmers are to receive any compensation for their efforts and troubles of superintendence or management the value of the crops must exceed these expenses. In order that the receipts may also be fully understood, a brief explanation relating thereto will follow.

The products, the value of which constitute the receipts, consist of the grain and the accompanying straw and stalks. Compared, in this respect, with the outlays, the receipts are easily ascertained. Especially is this true when the products are sold directly in the market. In practically all markets the prices of the grain are regularly published and complete records of the same are therefore easily available. While of by-products this is not usually the case, experience soon familiarizes one with their value for the uses to which they are put. When the products are utilized as the raw material for beef and dairy products their value becomes more involved. But with their value in such cases we are not concerned here since the investigation is limited to a comparison of cost and value when the products are disposed of directly. It can be said, however, that inquiries upon this point revealed the fact, that the farmers generally regard corn and oats as worth, at least, one-third more to them when turned into beef and dairy products than when sold at such prices as were paid in the market throughout 1896 and during the first three or four months of 1897. As already intimated the products of the crops included consist of the grain and the accompanying straw and stalks.

Grain: In each instance the farmers were requested to

give the yield per acre in bushels and the price paid per bushel when delivered in their local market or where sold. The yield and price thus given by the farmers are shown, and from this has been computed the value per acre. It will be noticed that the yield and price given here do not quite correspond to the average shown in crop reports. The reasons for this are almost too obvious to mention. The crop reports show the average yield for the whole state and the average price for the whole year in our grain centers, while these tables show only the yield of those reporting and price actually obtained in the local market where the grain was sold.

Straw and stalks: The straw and stalks which accompany the grain are mostly consumed or used on the farm. Now and then quantities of these products are brought to the market; especially is this true of rye straw; but as a rule they can be used to better advantage at home. When consumed on the farm it is mostly used for feed, and for manure or bedding. In the market, rye straw often brings from \$5.00 to \$6.50 per ton. The farmers were asked to give the money value of the straw and most of them complied with this request. Of those who did not comply the greater proportion stated that while they found the straw valuable they could not express or measure its value in money.

It is evident, however, that straw and stalks possess considerable value and that no account of the income and expenses of farming or of raising any of the crops included is complete until these products have in some way been included. It is true that their money value is difficult to ascertain, because comparatively small quantities are sold. But those who from experience have become familiar with their qualities and the uses to which they are put are usually able to overcome this by comparing their value for certain purposes with that of some other product used for the same purpose, the commercial value of which is known. Thus, for instance, the value of straw and stalks for feed and manure may be compared to the value of hay and fertilizers. Many farmers went into detail in their efforts to show the relative value of these two classes of commodities and in

their conclusions, based as they were upon experience and close observation, could not but be accepted here. Their figures also agree quite closely to those shown by scientific tests and with such information as we were able to gather from personal observations and inquiries. As a few reports were used in which the value of straw and stalks, for reasons already mentioned, were not given it became necessary to make proper corrections. In making these corrections the above facts were, of course, used as a basis, but, as a rule, the values fixed in this manner were lower than that of the reports in which the farmers' own figures were accepted. The aim was to keep within a safe limit and it can be said without hesitation that the value of straw and stalks has not been placed at too high a figure.

In order to show what has been found to be the average composition of feed and fertilizing ingredients in straw and stalks as well as the commercial value of these ingredients in concentrated form and the relative yield of straw and stalks the following tables and facts relating to this from the various reports issued by the Wisconsin Experiment Station, have been included:

Proportion of feed ingredients in straw and stalks.

Classification.	Water.	Ash.	Crude protein.	Ether extract fat.	Nitrogen free ext.	Crude fibre.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Wheat straw	9.6	4.2	3.4	1.3	43.4	38.1
Oat straw	9.2	5.1	4.0	2.3	42.4	37.0
Rye straw	7.1	3.2	3.0	1.2	46.6	38.9
Barley straw	14.2	5.7	3.5	1.5	39.0	36.0
Corn stalk			3.8	1.1	31.9	19.7

The figures in the above table have been taken from the Thirteenth Annual Report of the Experiment Station of Wisconsin, and shows the average composition of the straw and stalks included as feed stuff. Of the ingredients in this table all but water and ash have a commercial value. In the Tenth report of the Wisconsin Station, their cost in concentrated feed stuff is as follows: of one pound of crude protein 1.6 cents; of one pound of ether extract 3.4 cents; of one pound of nitrogen free extract .48 cents; of one pound of crude fibre .24 cents. Two pounds of straw or stalks are

usually allowed for one pound of grain but the actual proportion of straw is usually above this figure; especially is this true of rye and oats.

Fertilizing constituents in wheat, oats, rye and barley straw and also in corn stalks.

Classification.	Ash.	Nitrogen.	Phosp. acid.	Potash.
	Per cent.	Per cent.	Per cent.	Per cent.
Wheat straw	3.81	.59	.12	.51
Oat straw	4.76	.62	.20	1.24
Rye straw	3.25	.46	.28	.79
Barley straw	5.30	1.31	.30	2.09
Corn stalks	3.74	1.04	.29	1.40

The above table, while it resembles the one next preceding it and has been compiled from the same reports, differs from it in many respects. The first table shows the percentage of food ingredients in the products included. This table shows the percentage of fertilizing ingredients in the same products. Among other differences may be noticed the variation in the quantities of the two kind of ingredients contained. As has been shown under fertilizing these ingredients also have a commercial value. In the reports above referred to these values are shown to be of nitrogen 12 cents per pound; of phosphoric acid 5 cents per pound; of potash 4.5 cents per pound.

To determine the yield of straw to the acre is not easy. From various estimates in the different reports it would seem that two pounds of straw to one of grain has been considered a fair proportion. This is probably also as nearly correct as it is necessary to come to it for most purposes. The estimates of many farmers on this point, however, indicate that of rye, oats, and even of corn, the proportion of straw or stalks is rather above than below the above figures.

As said, the receipts to the farmers from the crops included consist of the value of the grain and straw grown. It may be urged that the land or stubble, after the grain is cut and removed, is worth something for pasturing purposes. Inquiries upon this point, however, revealed the fact, that by far the greater proportion of those who reported did not regard the stubble as worth anything to them or for pasturing. In most cases it seemed to have been plowed up

almost immediately after cutting. Then again there is little or nothing left, after the grain is taken away, for the cattle to feed on. Those who considered the stubble as worth something, seldom placed its value above 25 cents an acre. Besides these facts, it is even doubtful whether the value of the stubble—if it has any—should be credited to the products. Considering what has been said it was thought best not to take any account whatever of this item. The elements of cost and value which have thus been briefly described will be more fully explained later.

The investigation is based upon the data compiled from 1,510 reports. This data has thus served as a basis or foundation. In the tables, it is presented separately, usually ahead of the calculations which have been made upon it, but in such a way that the relations between the two is readily noticed. Thus pages 34 to 91, inclusive, contain the complete presentation of 40 reports. In the first four pages in order we find, in detail, the most important data. In the next four pages this data is briefly explained and summarized. Following this are the calculations with summaries and explanations of same. Of these, ten pages have been devoted to each of the five crops—six, in each case to the details of outlays and receipts per acre and four to summarizing, etc.

Pages 92 to 149, inclusive, contain the complete presentation of 400 reports. In this the same method and order as in the above presentation have been observed, in fact, the two differ only in the number of reports used.

Pages 150 to 156, inclusive, contain the complete presentation of 70 reports and show the cost of production and value of products of 1,000 acres of each crop. In this presentation all detail figures, whether relating to the basis data or to the calculations, were omitted.

Pages 157 to 193, inclusive, contain an analysis of all the basic data thus far presented, and show the average cost and value per acre as computed from same. In these pages much of what has already been said is repeated, but it was thought necessary to do so in order to bring out the whole effect.

Pages 194 to 196, inclusive, contain the complete presenta-

tion of the data of 1,000 reports and of the cost of production per acre as computed from this data.

FERTILIZING.

The term fertilizing in this investigation is used in a sense of the expenses involved in maintaining the productive power of the soil. It is a common experience on practically all farms that when a few crops have been taken off of a piece of land, without making any returns to it, the yields are gradually growing smaller until finally, if this course is kept up, they decrease to such an extent that it no longer pays to cultivate the land. On good, and generally on new soil, this change in the condition of the land is less sudden, but in all cases it is sure to take place. For the cause of this inevitable result it is only necessary to question the soil. If this is done properly it will soon be discovered that the account with it has been overdrawn and that new drafts will not be honored until covered by new deposits, or in other words, that the plant food in it is exhausted. In the composition of the soil are found a large number of elements possessing different characteristics. Many of these are essential to plant life; in fact, no growth is possible or can be developed unless they are present in available forms. By the growing crops these elements are absorbed from the soil and by some system of cell building or natural processes transformed into substances which serve as food for both man and animal.

The amount thus taken away from the soil varies with the crop. Some require more, others less. But by all there is a demand for these elements, which if a good yield is to be obtained, must be met. Most of the elements thus required are supplied in the soil from natural sources. But others, such as nitrogen, phosphoric acid, and potash, while often present in the soil in quantities sufficiently large to meet the needs of several crops, have few such sources of supply; especially is this true of such mineral elements as phosphoric-acid and potash. When, therefore, under otherwise normal conditions there is a sharp decrease in the yields, the probabilities are that either one or more of the above three elements are lacking or exhausted by the crops. In such

cases the fertility of the soil may be restored by applications of the elements wanted, and this is also the practice on the farm. From this it appears that the problem of keeping the soil productive is mainly one of supplying it with the necessary amounts of nitrogen, phosphoric acid and potash.

The methods by which these elements are furnished vary somewhat with the soil and locality. Soils which are rich in plant-food need less from outside sources than poor soils. Then, again, a certain kind of fertilizing may be more easily obtained than others; or, perhaps, better suited to the soil. The popular idea, however, seems to be to keep as much stock as can be maintained on the farm and to return their voidings or manure to the soil. Short rotations with clover the second growth of which, one or two years from seeding, is sometimes plowed under, is also largely practiced. Commercial fertilizers are used only occasionally. As barn yard manure, especially if well cared for, and clovers contain large quantities of plant food, it is very likely that with these alone the land may be kept in good condition.

To ascertain the cost of keeping the soil productive by these means is very difficult even to the farmers themselves. While less expensive than commercial fertilizers they still constitute a large proportion of the expenses on the farm. In preparing, caring for, hauling and spreading barn-yard manure upon the land much labor is involved, which at the ruling rate of wages would amount to quite a sum. To this should also be added the value of the material used for bedding. In clovers or green manuring there is at least the loss of the second growth for feeding purposes, when this is plowed under, to be taken into account. These are the principal factors the farmers took into consideration in estimating the average actual cost per acre of manuring. About 90 per cent. of the farmers reporting thus placed the annual expenses per acre at from 50 cents to \$1.50, the average being about 70 cents. The figures given by the remaining 10 per cent. varied greatly; by some the annual cost per acre was placed as high as \$10; by others as low as 25 cents. There were strong evidences of errors, however, in these reports and their figures were therefore corrected. As

all the figures and other facts bearing upon this which were submitted by the farmers were examined, verified and corrected with special care, the results as they appear in this investigation, if not absolutely correct are as nearly so as any that can be obtained.

The United States Department of Agriculture as well as the different state agricultural experiment stations, have, in the interest of scientific farming, conducted valuable experiments along the lines discussed in this part. The results of these experiments are published in their reports, and show among other things, the amount of plant food found in the different soils, the amount carried away in the crops and the amount found in various kinds of fertilizers through which it is returned to the soil. As these experiments were conducted under the direction of well known scientists who are experts in their line, the results are reliable and may be safely used as a basis for further deductions.

In order to furnish those who desire either to continue the study of this subject further, or to compare our figures with those which may be computed from the results of the different experiments, with some of the material essential for this purpose, a few facts from these experiments have been used here.

As to the amount of plant food in the land the experiments reveal the fact that ordinary good soil may be expected to contain from .1 to .2 per cent. of nitrogen, from .1 to .4 per cent. of phosphoric acid and from .1 to .6 per cent. of potash. Since one acre of such soil, one foot deep, will weigh approximately 3,600,000 pounds it must contain at least 3,000 pounds each of nitrogen and phosphoric acid, and from 3,000 to 6,000 pounds of potash or plant food enough for nearly one hundred average crops of wheat. They also show that there are large quantities of these elements in the subsoil.

These facts indicate the amount of plant food that is likely to be found in most soils of average quality and suggests its great importance to the farmers. As only a portion of this plant food is, as a rule, available to the crops and no process seems to have been devised by which the amount or proportion of this part can be ascertained, and as the relative amount of the different food elements greatly vary between

the different soils, it is impossible to determine its exact value. Its money-value, even that of the quantity contained in one acre only, would amount to quite a sum if measured in the prices paid for the corresponding ingredients in commercial fertilizers. To the farmer it constitutes a kind of reserve fund upon which heavy drafts may be made, often even without impairing the productive power of the soil. The value of this fact alone, especially under unexpected or adverse circumstances, is great. By improved or proper methods of cultivating the soil it is also possible, in most cases, to considerably reduce the proportion of it which is not available to the crops, and it is often cheaper to secure plant food for a particular crop by these means than by the application of fertilizers.

In all methods of keeping up the fertility of the soil it should therefore receive the fullest consideration. How to best utilize these vast resources is largely a financial question which experience alone can solve. It would seem, however, that to draw too heavily on them is bad policy. On the other hand it is questionable whether good management would, in all cases, advise the application of fertilizers on soils which already possess an abundance of plant food for the demands to be made upon it.

Having seen what is likely to be the amount of plant food in the soil as well as some of the effects of these valuable deposits upon the cost of keeping up the soil's productive power, a brief inquiry into the demands that probably will be made upon it may be in order. In the "Year-Book" for 1895 of the U. S. Department of Agriculture is a table showing the average composition of plant food in the different crops in this country, and from this the following figures relating to the crops included in this investigation have been taken.

Percentage of Nitrogen, Phosphoric Acid and Potash in the different crops.

(From Year Book, 1895, U. S. Department of Agriculture.)

CROPS. Classification.	NITROGEN.		PHOSPHORIC ACID.		POTASH.	
	Grain.	Straw.	Grain.	Straw.	Grain.	Straw.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Corn—Indian	1.82	1.04	.70	.29	.40	1.40
Wheat, Ave., spring and winter	2.36	.59	.79	.12	.50	.51
Oats	2.06	.62	.82	.20	.62	1.24
Barley	1.51	1.31	.79	.30	.48	2.09
Rye	1.76	.46	.82	.28	.54	.79
Clover—Red—Hay .....	.....	2.07	.....	.38	.....	2.20
Timothy Hay .....	.....	1.26	.....	.53	.....	.90

The above table shows the percentage of nitrogen, phosphoric acid and potash in the grain and straw respectively of corn, wheat, oats, barley and rye, also in clover and timothy hay. It will be noticed that the different crops contain different quantities of these ingredients and in different proportion. Of nitrogen and phosphoric acid the largest percentage is generally found in the grain; of potash in the straw. Clover hay contains nearly twice as much plant food as timothy hay.

The amount of plant food thus found in the crop has been taken from the soil. Some crops are rich in one element, while others contain more of some other element and again some crops are powerful feeders and with their strong and deep growing roots able to absorb plant-food and thrive where others would starve for want of nourishment. In the method of fertilization to be adopted, these facts, as well as the character of the soil and the amount of plant-food already in it, should receive consideration. These are also found among the main reasons why adopting rotation of crops is beneficial. When the same crop is grown on the same land for a number of years there is a constant draft upon the same elements, and the soil is much more quickly exhausted than if other crops requiring different elements had been substituted for it in intelligent rotation. Rotation is also important for other reasons. It may be made to destroy noxious weeds, to improve the physical conditions of the soil, to distribute the farm labor more evenly during the year and to economize the use of plant-food, even to increase it; facts too well known to need an explanation.

A more comprehensive view of the amount of plant-food carried away from the soil, may be had by computing it into pounds. This has therefore been done. The results appear in the following table:

Showing the amount of plant food in the different crops.

Corn—30 Bushels.

Classification.	Nitrogen.	Phos- phoric acid.	Potash.
	Lbs.	Lbs.	Lbs.
Grain, 30 bushels..... 1,800 lbs..	32.76	12.60	7.20
Stalk..... 3,000 lbs..	31.20	8.70	42.00
Total..... 4,800 lbs..	63.96	21.30	49.20

Wheat—17 Bushels.

Grain, 17 bushels..... 1,020 lbs..	24.07	8.66	5.10
Straw..... 3,000 lbs..	11.80	2.40	10.20
Total..... 3,020 lbs..	35.87	10.46	15.30

Oats—30 Bushels.

Grain, 30 bushels..... 960 lbs..	19.78	7.87	5.95
Straw..... 2,000 lbs..	12.40	4.00	24.80
Total..... 2,960 lbs..	32.18	11.87	30.75

Barley—25 Bushels.

Grain, 25 bushels.. 1,200 lbs..	18.12	9.48	5.76
Straw..... 2,000 lbs..	26.20	6.00	41.80
Total..... 3,200 lbs..	44.32	15.48	47.56

Rye—14 Bushels.

Grain, 14 bushels..... 784 lbs..	13.70	6.43	4.23
Straw..... 2,000 lbs..	9.20	5.60	15.30
Total..... 2,784 lbs..	22.90	12.03	20.03

Hay—Clover and Timothy.

Red clover..... 3,000 lbs..	62.10	11.40	66.00
Timothy..... 3,000 lbs..	37.80	15.90	27.00

According to the foregoing table the total of the three elements removed from one acre by the grain and straw or stalks, of the yield indicated, of the different crops is as follows: by 30 bushels of corn 134.46 pounds; by 17 bushels of wheat 61.63 pounds; by 30 bushels of oats 74.80 pounds; by 25 bushels of barley 107.36 pounds; by 14 bushels of rye 54.96 pounds. In a crop of 3,000 pounds of clover hay 139.50 pounds of these elements are removed while the same yield of timothy hay removes 80.70 pounds. These crops are among the most exacting and cannot be raised profitably on land where there is not plenty of available plant-food.

Of the cereals, corn requires the most. Barley and oats are next in order. While oaths require more nourishment than wheat it is a stronger plant and may do well on land on which wheat could not be raised in paying quantities. Red clover is a heavy feeder and strong digester, and is able to absorb plant-food that would be of little value to the cereals.

It also absorbs large quantities of nitrogen from the air and on the whole leaves more plant-food behind in roots and stubble than is carried away in the hay. If desirable to maintain the plant-food in the soil it is plain that the amount taken out in crops must be returned to it in some manner.

As has already been said those who reported accomplished this by barnyard manure and short rotations of clover or similar plants. In order to furnish a comparison between the amount which may, by these means, be returned to the soil and the amount required by the different crops, the following table, showing the contents of plant-food in one ton of mixed manure and in one crop of clover, have been included.

Amount of plant-food likely to be found in one ton of mixed manure and in the tops and roots of the second growth of one acre of clover two years after seeding.

Classification.	Nitrogen.	Phosph'ric acid.	Potash.
	Lbs.	Lbs.	Lbs.
Mixed manure, 2,000 lbs.....	12	5	11.4
Clover, 1 acre tops and roots 2nd growth.....	139	68	10.0

The above table shows that one ton of mixed manure contains about 12 pounds of nitrogen, 5 pounds of phosphoric acid and 11.4 pounds of potash, and that the roots and tops of the second growth of clover two years from seeding contain about 139 pounds of nitrogen, 68 pounds of phosphoric acid and 110 pounds of potash. These figures are the average of several experiments at the different stations and are likely to be as nearly correct as possible. An analysis of the manure of milch cows would probably show a smaller amount of the different fertilizing ingredients than the above table; but of the manure from other farm animals the analysis would show

larger amounts. In the analysis of the clover both roots and tops were included. The roots and stubble alone would contain about one half as much of each of the three elements as the table shows for the whole, or enough for a crop of about 25 bushels of wheat and the accompanying straw. Three loads of manure of the same quality as that in the table would on the same basis be sufficient for a crop of from 17 to 20 bushels of wheat.

In this connection it should be noticed, that clovers, while adding large quantities of nitrogen to the soil, by absorbing it from the air, do not enrich its mineral matter or the phosphoric acid and potash. The clover plant has deep growing roots which in penetrating the sub-soil gathers up the plant food in the lower strata and brings it up to the surface where it is stored in roots and stubble, and where, because the roots are quickly decomposed, it is easily accessible to succeeding crops. Clovers, however, are valuable plants. Besides thus furnishing the soil with vast stores of nitrogen from the air and carrying mineral matter from sub-soil to where it becomes available to other crops they greatly improve the physical condition of the land. Their organic matter has a good effect upon the texture of all soils, making some more retentive of heat and water and others lighter according to their character. With short rotations, clovers would supply all the nitrogen needed for good crops. By occasional applications of cheaper ingredients such as phosphoric acid and potash in form of commercial fertilizers, in addition to clovers, the productive power of the soil might therefore be fully and easily maintained.

Besides what may thus be returned to the soil in the way of plant-food by manures and clovers it is well established that it absorbs annually from the air and rain large quantities of nitrogen. In fact, it is generally held, and with good reasons, that enough nitrogen is secured from these sources alone to supply, at least, one-third of the amount needed by the crops. As to the amount of manure produced definite data could not be obtained in all cases. About 50 per cent. of those who reported gave the average annual output on their farms. From this it appears, however, that the

yearly product may safely be placed at fully two and one-half loads—one load being equal to one ton—to each acre under cultivation. That this estimate is not likely to be far out of the way may be seen from the fact that of the 50 per cent. of the whole who reported as to this, the average number of loads to the acre cultivated was found to be 2.71. The value of the labor involved in handling and spreading the manure was, by over 75 per cent. of those reporting, placed at from 15 to 50 cents per load. The second growth of clover which is usually plowed under the second year from seeding is, of course, of some value as feed but in, say a three year rotation, the yearly value per acre would not be great. From the facts thus presented, however, it certainly appears that it is quite possible, by the methods in question, not only to keep the soil productive, but that this may be done at a cost not exceeding that charged to each crop in this investigation.

As already intimated there are other sources of plant-food than those discussed. The elements needed for plant growth are found stored in nature in rocks, soils and various other deposits as well as in the refuse of many manufacturing industries. These substances are placed upon the market and sold under the name of commercial fertilizers. The tremendous increase in this country in the manufacture and sale of this kind of fertilizer during the last twenty or thirty years would seem to indicate that they may be used to advantage under some system of farming. In their favor it is said, that, being concentrated, they may be handled cheaper and much more easily than manures; that they may be more fully adjusted to the demands of the crops; that they produce a sweeter or better fruit; that they are quick acting and can be applied at the right time or when they will be of the greatest benefit to the crop. While many of these points are disputed, the fact still remains that commercial fertilizers are, in many respects, superior to other forms of fertilizers. Whatever their advantages, however, they seem to be more than offset in price. Many farmers find them too expensive for low priced crops such as the cereals, etc. At least, this was the reason given in nearly every instance, by those who reported, for mainly adopting other means of keeping their

land in good condition. As to their prices there are, of course, great variation depending upon the market. From present quotations it appears that nitrogen may be had for 12 cents per pound and phosphoric acid and potash for 5 and 4.5 cents per pound respectively.

Price of fertilizing ingredients in commercial fertilizers.

Classification.	Price per pound.
Nitrogen.....	12 cents.
Phosphoric acid.....	5 cents.
Potash.....	4.5 cents.

Here we see the approximate commercial value of fertilizing ingredients. Nitrogen, at least when compared with the other elements, appears rather expensive, its price being nearly three times that of phosphoric acid and potash. From the analysis of clovers it was seen, that these are especially rich in nitrogen and that besides furnishing hay, they deposit large quantities of this element in the soil, in short rotations, enough for the intervening crops. As a crop of clover hay is about as valuable as a crop of cereals it would seem from these facts that it is rather poor economy or management on the part of the farmers to buy the nitrogen, needed for fertilizing, in the market. When studied in connection with the other tables and facts shown in this part the above table will be found interesting, because by its aid, the value of the plant food in the soil as well as of the amount carried away in the crops and of what is brought back to the soil may be ascertained. Computed on this basis, the total money value of these three ingredients taken away from the soil in this state in 1896 by the six crops included amounted to about forty-five million dollars.

With the proportion of plant food in the grain and straw, practically the same as in the preceding tables and the yield, as shown in the report of the state census in 1895, the five crops included in this investigation absorbed that year about 187 million pounds of nitrogen, 65 million pounds of phosphoric acid and 167 pounds of potash.

The largest quantity is charged against oats, with corn a

close second. Next in order are barley, wheat and rye. Oats was also by far the biggest crop that year, covering 46 per cent. of the area devoted to these five crops in the state. Corn covered 26 per cent. and the other three crops about 11, 10 and 7 per cent. in the order given. While corn covered only a little more than half the area only it required nearly as much plant-food as oats, and together these two crops covered 72 per cent. of the area and about 71 per cent. of the plant-food used.

Barley, wheat and rye together thus covered only 28 per cent. of the area and about 29 per cent. of the plant-food. What has here been alluded to in a general way only is presented more in detail in the following table. While the figures given there can for reasons too obvious to mention be only approximately correct they indicate clearly enough the drafts made upon the soil by the crops included.

Amount of fertilizing ingredients carried away from the soil in this state in 1895 by the crops included.

Items.	Nitrogen. Lbs.	Phosphoric acid. Lbs.	Potash. Lbs.
Wheat	20,385,000	6,252,500	10,278,100
Corn	65,768,000	21,355,400	56,058,500
Oats	65,323,000	24,793,700	63,843,800
Rye	6,956,000	3,625,900	6,029,000
Barley	27,409,000	9,182,300	30,699,000
Total	186,841,000	65,210,000	166,908,400

The above figures represent enormous values and suggest very forcibly the fact that there are expenses to meet in farming as well as in other lines of business. Indeed, were there no other sources of plant-food than to buy it in the market, farmers, who raise mostly cereals, would likely find their lot a hard one. At the present price of most of these products the total value of both grain and straw is less than the expense of fertilizing alone. But luckily for the farmer nature even here as has been seen, comes to his assistance. By wisely directing the forces at command and good management in general the land may be kept fertile at a much lower figure.

As the preceding table shows, oats and corn are the principal products. These crops are used for food and almost wholly fed on the farm. During the past decade the area devoted to these crops has also rapidly increased. This undoubtedly confirms the fact that the farmers in this state are mostly given to cattle raising and dairying. As, according to their own estimation, oats and corn are worth about one-third more as the raw material of pork, beef, butter and cheese than in the market, this seems good business on their part.

But large as the quantity of plant-food required by the different crops appears, a glance at the following table showing the amount of plant-food produced in this state in 1895, by the farm animals included, would tend to show that the farmers ought not to find it very difficult to keep up their land without resorting to commercial fertilizers. Few farmers, however, utilize all the manure dropped by their stock. Perhaps it is not too much to say that fully one-third of it is lost to them, in one way or another.

Approximate quantities of fertilizing material voided in the state in 1895 by the farm animals included.

Items.	Nitrogen Lbs.	Phosphoric acid. Lbs.	Potash. Lbs.
Horses, etc.....	65,824,000	25,143,000	22,714,000
Cows and cattle.....	258,346,000	59,281,000	161,656,000
Pigs.....	13,150,000	11,300,000	13,000,000
Sheep.....	10,600,000	7,700,000	18,600,000
Total.....	347,920,000	83,424,000	215,970,000

According to the above table the voidings of the farm animals in this state in 1895 contained in round numbers 348 million pounds of nitrogen, 83 million pounds of phosphoric acid and 216 million pounds of potash. Cows and cattle furnished nearly one-third of this, while the balance was had from horses, pigs and sheep. Compared to the quantities carried away in the grain the above figures seem large. As the figures used in computing them were rather below than above the average they are not likely to be too high. They cer-

tainly show the importance of manures and indicate, that if properly stored and utilized, the manures produced in this state would not fall very far short of supplying all the plant-food required.

We have seen the amount of plant food likely to be found in fairly good soils, the amount of plant-food carried from it in the crops and the means by which the amount thus carried away is restored to the soil. It now remains to determine the expenses of this maintenance.

As has been said fertility is maintained chiefly by the rotation of leguminous and other crops and the application of barn yard manure. In addition to this large quantities of nitrogen are annually absorbed by the soil from the air and from the water or rain. While from the facts developed much light has in a general way been thrown upon the cost, little in the way of definite figures has been shown. To ascertain the yearly cost under this method, or in other words the proportion of this cost that ought to be charged to the different crops is far from an easy task. It is true that the prices of the corresponding elements in commercial fertilizers is known, and that the cost might therefore be based upon these prices. The cost of clovers and manures, however, is much less than of commercial fertilizers. A crop of clover hay is worth about as much as a crop of grain. The plant-food stored up in its stubble and roots may therefore be said to be had for nothing. In cases where the second crop is also plowed under there is, of course, the value of this, for feed, to be taken into account. But the interval between the times when this is done seems to be so long that the yearly cost from this source is very small. As to manures, while they contain considerable plant-food and are beneficial to the soil in other respects their cost to the farmers are little more than the expense of caring for them and of hauling and spreading them upon the land. To the nitrogen obtained from natural sources there is, of course, no expense attached. From this it appears that the only expense that ought to be charged to the cost of producing the crops included for the keeping up or the depreciation

of the soil, is that of the manures; and as manures when plenty of stock is kept—as is the case now in the state—cost but little more than the labor involved in caring for and applying it, this ought to constitute the basis of the expense.

In order to afford a means of comparison between the amount of plant-food carried away and restored to the soil under the systems of farming and maintenance in question the following two tables have been included:

Amount of fertilizing elements and value of same in each of the different crops included.

Classification of crops.	Nitrogen, Lbs.	Phosph'ric acid. Lbs.	Potash. Lbs.	Value in com. fert.
Clover—Hay.....3,000 lbs.	62.10	11.40	66.00	\$10.99
Corn.....30 bush.	63.96	21.30	49.20	10.95
Oats.....30 bush.	32.18	11.87	30.75	5.83
Clover—Hay.....3,000 lbs.	62.10	11.40	66.00	10.99
Wheat.....17 bush.	35.87	10.46	15.30	5.52
Barley.....25 bush.	44.32	15.48	47.56	8.24
Rye.....14 bush.	22.90	12.03	20.03	4.25
Total.....	323.43	93.94	294.84	\$56.77

In this table it appears that seven crops, two of clover hay and one each of corn, oats, wheat, barley and rye absorbed from each acre of soil 323.43 pounds of nitrogen, 93.94 pounds of phosphoric acid and 294.84 pounds of potash; and that the total value of these elements at the prices paid for them in commercial fertilizers is \$56.77 or \$8.77 yearly. This then constitutes the amount of plant-food that in this case would have to be returned to the soil in order to maintain its productive power or in order to avoid drawing too heavily, or at all, upon its original resources.

This draft is supposed to be covered by the amount returned from the sources mentioned as shown in the following table:

Amount and value of fertilizing elements brought back to the soil from various sources.

Classification.	Nitrogen Lbs.	Phosphoric acid. Lbs.	Potash Lbs.	Value of these ele- ments in com. fert.
Two crops clover—stubble and roots	10)	50	90	\$13.55
18 loads manure—2.5 loads per A, yearly..	180	90	198	39.33
Natural sources—rain and air	108	.....	.....	12.00
Total.....	424	140	288	\$65.88

From this table may be seen the amount of plant-food likely to be returned to the soil, in the stubble and roots of two crops of clover, in eighteen tons or loads of stable or barn yard manure, and from natural sources, or the amount of nitrogen absorbed by the soil from the rain and air during a period of seven years. The stubble and roots of one acre of clover will contain from 40 to 60 pounds of nitrogen, 20 to 30 pounds of phosphoric acid and 40 to 50 pounds of potash. Eighteen tons of mixed manures contains about 216 pounds of nitrogen, 90 pounds of phosphoric acid and 198 pounds of potash. It is generally conceded that about one-third of the nitrogen needed by the crops is absorbed from water and air. In that case the amount thus obtained from natural sources, during the seven years or crops covered by the above two tables would be 108 pounds. The table also shows that total plant-food to one acre from these sources is 424 pounds of nitrogen, 140 pounds of phosphoric acid and 288 pounds of potash and that the value of these elements at the prices paid for commercial fertilizers is \$69.88 or almost \$10 to each acre.

The above two tables may thus be said to represent the outgo and return of plant-food upon the land. In comparing their totals the difference between the two sides is readily seen. Under the conditions given more nitrogen and phosphoric acid would be returned to the soil than taken out of it by the crops and of potash the amount would about balance. But these differences may be offset by larger yields and other causes.

While the figures given above are correct averages of many

analyses made at the different experiment stations it cannot possibly be claimed for them that they, even at best, more than approximately represent actual conditions. So much in this respect depends upon correct tilling of the soil, the care given to farm animals and manures, climatic and other conditions that no absolutely definite rules and facts can be given. One conclusion, however, it would seem might be safely drawn and that is that with a rather moderate rotation of clover and with from two to three tons of good manure to the acre yearly, the productive power of the soil in all grain, mixed or dairy farming may be fully maintained.

As to the cost of this maintenance opinions, as has been seen, differ. The value of the plant-food in a ton or load of manure at prices paid for commercial fertilizers is somewhat above \$2.00. On this basis, with an average of two and one-half loads to the acre, the cost of the same would be \$5.00. A few farmers also placed it at this figure. A much larger proportion of the farmers, however, thought this basis too high, giving it as their reason for this opinion that the returns from the use of the manure do not even warrant a valuation of 50 per cent. of this unless perhaps when so situated that the best use possible could also be made of all other by-products on the farm such as straw and stalk, etc. On this basis the cost of two and one-half loads of manure would be \$1.50. Over 50 per cent. of the farmers gave only the labor cost of hauling and spreading and this last was therefore mostly used in the following tables:

TABLE I.—Data upon which the cost of production and value as shown in tables 4, 8, 12, 16 and 20 are based.

WHEAT.

OFFICE NUMBER.	PLOWING.		HARROWING AND SEEDING.		CUTTING.		SHOCKING AND STACKING.			
	<i>Time and wages man and team.</i>		<i>Time and wages man and team.</i>		<i>Time and wages man and team.</i>		<i>Time and wages one man.</i>		<i>Time and wages 2 men and team.</i>	
	Hours worked.	Wages per hour.	Hours worked	Wages per hour.	Hours worked.	Wages per hour.	Hours worked.	Wages per hour.	Hours worked.	Wages per hour.
1.....	5	20c	3 1-4	20c	1	25c	1 1-3	12c	1 5-8	32c
2.....	4	35	3	30	1	30	2	15	2	45
3.....	3 1-3	30	2	27 1-2	1	30	1 2-4	12	1 11-19	38
4.....	3 2-5	25	3	21	1	25	1	10	1 1-4	32
5.....	4	25	2	25	1	25	1 4-15	15	1 5-8	40
6.....	4	20	2 1-4	20	9-10	20	1	10	2	30
7.....	3 1-3	30	3 1-2	22	2-3	30	1	15	1 10-37	37
8.....	5	20	2 1-2	20	1	25	1 1-3	15	2	35
9.....	5	15	4 1-5	15	12-3	15	1 1-5	10	1 17-25	25
10.....	6 2-5	25	3 3-5	25	1 1-5	25	1 2-3	12	1 24-37	37
11.....	5	27	2 1-2	27	1	27	1 2-5	15	1 3-7	42
12.....	5	20	3 1-4	20	3-4	20	2	10	2 1-2	30
13.....	5	30	2 2-5	30	1	30	2	12 1-2	1 2-3	42
14.....	3 2-7	35	3 1-3	32	12-7	45	1	13	1	42
15.....	5	20	2 1-2	20	1	20	1 3-4	12	1 11-16	32
16.....	6 2-3	30	3 3-5	30	1 1-2	30	1 1-5	15	1 2-9	45
17.....	5	20	2 3-4	20	1	20	1 11-10	10	1 3-5	30
18.....	5	20	2	20	1	20	1	10	1 4-15	30
19.....	5	25	3	25	1	27	1	10	1	35
20.....	5	20	3 1-2	20	1 1-2	20	2	11	2	31
21.....	4	30	2 1-5	25	1	30	1	13	1 1-3	38
22.....	4 1-2	27 1-2	2 2-3	24	1	27	1	12	1 1-4	34
23.....	5	27 1-2	3 1-4	25	1 1-4	30	1 2-3	12 1-2	2 3	37 1-2
24.....	4	30	3 1-4	30	5-6	30	1 1-4	12 1-2	1 2-3	42 1-2
25.....	5	20	2 5-6	20	1	20	1 2-3	12 1-2	2	32 1-2
26.....	5	20	2	25	4-5	25	2	12 1-2	2	32 1-2
27.....	5	22 1-2	2	25	5-6	25	1 2-3	11	2	33 1-2
28.....	4	25	3 1-2	20	1	25	1	12 1-2	2	32 1-2
29.....	4	25	2 3-5	25	1 2-3	25	2	12 1-2	2	37 1-2
30.....	4	25	2 1-2	25	1	30	2-3	15	1 1-4	40
31.....	5	25	2 1-2	25	1	25	1 1-4	12 1-2	1 2-3	37 1-2
32.....	5	20	3	20	1	25	1	10	5-6	30
33.....	5	30	2	30	1	30	1 1-4	15	1	45
34.....	5	25	2 2-5	25	1	25	1 1-4	10	1 2-3	35
35.....	5	20	3	20	1	20	1 2-3	12 1-2	2	32 1-2
36.....	3 1-3	25	3	22	1 1-5	25	2	12	1	34
37.....	5	22 1-2	3	21	1	25	1	10	2	32 1-2
38.....	5	25	4 1-5	25	1	25	1	13	1 2-3	37 1-2
39.....	5	25	1 5-6	30	5-6	30	2	12 1-2	2	37 1-2
40.....	4	21 1-2	2 3-5	20	1	23	1	10	1	31
Total 40 acres.	185.31	983 50	112.25	951.50	41.30	1,029	55.50	485 00	61	1,423
Average one acre.	4 62	24 62	2.80	23 80	1.32	25 50	1.39	1 21	1.53	35 6

TABLE I.—Data upon which the cost of production and value of products as shown in tables 4, 8, 12, 16 and 20 are based.

CORN.

OFFICE NUMBER.	PLOWING.		HARROWING AND PLANTING.				CULTIVATING.		CUTTING.	
	<i>Time and wages man and team.</i>		<i>Time and wages.</i>				<i>Time and wages man and team</i>		<i>Time and wages.</i>	
	Hours worked	Wages per hour.	Harrowing.		Planting.		Hours worked.	Wages per hour.	Hours worked	Wages per hour.
		Hours worked.	Wages per hour.	Hours worked.	Wages per hour.	Hours worked.	Wages per hour.	Hours worked	Wages per hour.	
1.....	5	20c	2	20c	1 2 3	12c	6 1-4	20c	8 1-3	12c
2.....	4	35	2 1-2	30	1 4-15	30	6 2-3	30	5	15
3.....	3 1-3	30	1 2-3	30	5-6	30	5	25	1 1-5	25
4.....	3 2-5	25	2 6-11	22	3	12	5 1-11	22	5	10
5.....	4	25	2	25	1 8-25	25	6 2-5	25	4	25
6.....	4	20	2 1-2	20	2 1-2	10	4	20	8	10
7.....	3 1-3	30	1 11-15	30	1 17-25	17	4 2-5	25	1 3-5	25
8.....	5	20	1	20	1	20	8	20	5	15
9.....	5	15	3	15	2	10	6 2-3	15	5	10
10.....	6 2-5	25	1 2-5	25	5	12	3 4-5	25	5	12
11.....	5	27	1 1-2	27	3 1-3	15	5 1-3	27	8	15
12.....	5	20	1 3-4	20	1	20	6	20	5	10
13.....	5	30	2 2-5	30	1 3-4	12	12 1-2	12	5	12
14.....	3 2-7	35	2	35	1	30	5 2-3	30	1 2-3	30
15.....	5	20	2	20	3-4	20	5 4-5	20	7	12
16.....	6 2-3	30	2 2-5	30	3 1-2	15	4 1-3	30	6 2-3	15
17.....	5	20	3 1-2	20	1 3-5	10	5	20	6 3-5	10
18.....	5	20	1 1-2	20	2	10	5	20	3 3-10	20
19.....	5	25	2	25	2	25	5	25	5	10
20.....	5	20	2 1-2	20	3	10	8	20	8	12 1-2
21.....	4	30	1 1-2	25	2 3	25	6	25	6 3-4	13
22.....	4 1-2	27 1-2	2	27 1-2	1 2-3	12	6 1-2	25	10	12
23.....	5	27 1-2	4	25	3	12 1-2	9	25	8	12 1-2
24.....	4	30	2 1-2	30	1 2-3	15	8	30	7	15
25.....	5	20	2	20	2-3	20	8	20	7	12
26.....	5	20	2	20	2-3	20	10	20	10	12 1-2
27.....	5	22 1-2	1 1-4	22 1-2	2-3	22 1-2	7	20	7	11
28.....	4	25	4 1-6	25	1 2-3	12 1-2	10	25	7	12
29.....	4	25	1 1-2	25	3 1-3	12 1-2	8	25	8	12 1-2
30.....	4	25	2 1-2	25	1 1-4	25	3 3-4	25	6 2-3	15
31.....	5	25	1 1-2	25	1	25	5 1-3	25	8	12 1-2
32.....	5	20	3 1-2	20	1	20	6	20	7 1-2	10
33.....	5	30	3	15	3	15	12	20	7	15
34.....	5	25	1 1-2	25	2	10	8 3-4	25	9	10
35.....	5	20	2	20	1	20	8	20	10	12 1-2
36.....	3 1-3	25	2	22	2-3	22	6 1-4	22	1 1-4	22
37.....	5	22 1-2	2	22 1-2	5-6	32	10	22 1-2	1 2-3	38
38.....	5	25	4	25	3	20	7	20	8	12 1-2
39.....	5	25	2	25	2 1-2	12 1-2	10	25	7	12 1-2
40.....	4	21 1-2	1 1-2	22 1-2	1	20	5	20	3	20
Total 40 acres.	185.30	985 50	88.35	942 00	69	721 00	273.50	910 50	243	618 00
Average one acre	4.62	24.62	2.21	23 50	1.72	18.02	6.84	22.75	600	15.45

TABLE I.—Data upon which the cost of production and value of products as shown in tables 4, 8, 12, 16 and 20 are based.

OFFICE NUMBER.	SEED—QUANTITY USED PER ACRE.				Value per acre of land.	Value per acre of machinery and tools used.
	Wheat, bushels.	Oats, bushels.	Rye, bushels.	Barley, bushels.		
1.....	11-2	21-2	13-4	2	\$30 00	\$6 00
2.....	13-4	21-2	11-2	2	62 00	6 00
3.....	11-2	21-2	11-2	2	64 00	2 50
4.....	13-4	21-2	11-2	2	30 00	3 37
5.....	11-2	2	11-2	2	45 00	3 33
6.....	2	21-2	11-2	2	25 00	3 33
7.....	13-4	3	11-2	2	50 00	2 35
8.....	2	3	11-2	21-2	60 00	3 00
9.....	11-2	2	1	11-4	25 00	1 66
10.....	2	3	2	3	30 00	1 50
11.....	11-2	21-2	11-2	2	40 00	3 33
12.....	2	21-2	11-2	2	50 00	4 00
13.....	2	3	2	11-2	80 00	2 00
14.....	2	3	11-2	21-2	70 00	5 00
15.....	2	3	2	21-2	73 00	5 75
16.....	11-2	3	11-2	2	45 00	4 76
17.....	11-2	2	11-4	2	25 00	2 50
18.....	11-2	2	11-2	11-2	20 00	2 66
19.....	2	31-2	11-2	2	58 03	6 00
20.....	13-4	23-4	11-2	2	18 00	2 20
21.....	11-3	21-2	13-4	21-4	50 00	3 33
22.....	2	3	13-4	21-4	50 00	2 30
23.....	2	3	2	2	75 00	5 00
24.....	11-2	3	11-2	2	40 00	3 75
25.....	11-2	21-2	13-4	21-4	65 00	4 00
26.....	11-2	21-2	11-2	2	57 00	2 75
27.....	2	21-2	13-4	21-4	45 00	1 66
28.....	11-2	21-2	13-4	2	60 00	1 72
29.....	11-4	2	3	11-2	53 00	3 57
30.....	11-3	21-2	2	21-2	60 00	1 25
31.....	11-3	21-2	13-4	21-4	75 00	72
32.....	11-2	21-2	13-4	21-4	30 00	2 40
33.....	2	21-2	13-4	23-4	55 00	4 28
34.....	11-2	13-4	13-4	21-4	52 00	4 90
35.....	13-4	3	13-4	21-4	65 00	2 20
36.....	11-2	21-2	13-4	2	62 50	5 06
37.....	11-2	3	11-4	21-2	66 00	7 50
38.....	2	21-2	13-4	2	60 00	10 00
39.....	13-4	21-2	13-4	21-2	95 00	8 00
40.....	11-2	21-2	11-2	2	54 00	1 10
Total 40 acres..	67.25	104	59	84.5	\$2,099 50	\$146 73
Av. one acre...	1.68	2.6	1.47	2.11	\$52.49	\$3.668

TABLE I.—Data upon which the cost of production and value of products as shown in tables 4, 8, 12, 16 and 20 are based.

OFFICE NUMBER.	YIELD PER ACRE.									
	WHEAT, bushels.		OATS, bushels.		RYE, bushels.		BARLEY, bushels.		CORN, bushels.	
	1896.	Average 5 years.	1896.	Average 5 years.	1896.	Average 5 years.	1896.	Average 5 years.	1896.	Average 5 years.
1.....	15	19	40	54	22	18	30	28	40	37
2.....	18	17	40	36	20	20	30	32	40	37
3.....	26	20	60	48	20	23	30	38	60	54
4.....	17	16	39	37	22	20	35	31	40	38
5.....	20	22	47	40	17	19	35	30	45	37
6.....	16	17	52	45	28	20	34	28	50	45
7.....	20	18	40	43	23	20	35	30	40	40
8.....	30	27	50	41	25	22	37	30	40	40
9.....	15	18	35	35	18	17	35	32	35	35
10.....	12	16	50	40	25	22	35	28	40	40
11.....	15	17	40	40	30	25	36	32	40	40
12.....	20	20	40	48	24	23	30	32	50	45
13.....	18	17	37	36	18	18	27	30	34	33
14.....	20	24	40	36	30	25	25	25	40	34
15.....	25	28	40	42	18	17	28	28	45	45
16.....	18	18	38	40	14	17	35	30	40	40
17.....	20	17	36	30	16	15	30	27	50	40
18.....	17	16	35	32	10	14	28	27	35	32
19.....	20	18	50	37	25	24	35	32	50	40
20.....	10	15	50	45	30	25	35	33	45	40
21.....	18	16	40	38	18	20	33	30	40	38
22.....	24	27	40	43	20	20	30	32	42	41
23.....	15	18	50	58	20	20	30	30	50	42
24.....	18	16	45	40	30	28	35	33	45	42
25.....	20	18	40	38	22	20	35	33	50	45
26.....	16	16	43	45	20	20	28	30	45	42
27.....	16	16	40	40	20	18	30	32	40	42
28.....	10	11	40	40	20	20	40	32	40	38
29.....	10	10	35	35	15	15	27	22	30	30
30.....	16	16	35	38	15	17	32	35	50	45
31.....	19	22	50	42	22	22	26	30	56	45
32.....	15	14	42	40	16	16	28	30	50	42
33.....	16	16	50	44	17	18	40	35	50	42
34.....	16	21	35	36	20	18	32	33	40	35
35.....	15	13	40	37	28	27	30	30	40	38
36.....	16	15	35	39	22	39	35	30	38	33
37.....	16	16	50	42	18	17	23	30	40	38
38.....	18	17	40	47	20	20	20	20	50	46
39.....	20	24	60	45	24	23	31	27	50	40
40.....	16	15	45	42	20	22	30	28	50	40
Total 40 acres...	702	717	1,714	1,634	842	824	1,265	1,205	1,755	1,596
Average 1 acre.....	17.5	17.9	42.8	40.8	21.0	20.6	31.6	30.1	43.9	39.9

TABLE II.—SUMMARY TABLE I.

On this page, in order that they may become more easily accessible to those who may desire to use them, the results in the preceding table are presented in a more convenient form than was possible in that table.

Upon this data, and that on pages 41, are based the calculations on pages 34 to 91, inclusive.

For a more complete presentation of the basic data in which the results on this page is included, see next table in order.

1. GRAIN: *Time required, wages per hour.*

Classification.	Hours 40 acres.	Hours per acre.	Wages per hour. Cents
Plowing	185.3	4.62	24.62
Harrowing, etc., seeding	112.2	2.80	23.80
Cutting	41.3	1.32	25.50
Shocking, one man	55.5	1.39	12.12
Stacking, two men and team	61	1.53	35.60

2. CORN: *Time required, wages per hour.*

Plowing	185.3	4.62	24.62
Harrowing, etc	88.3	2.21	23.50
Planting	69	1.72	13.02
Cultivating	273.5	6.84	22.75
Cutting	243	6.06	15.45

3. *Quantities of seed used.*

	Bushels 40 acres.	Bushels one acre.
Wheat	67.25	1.68
Oats	104	2.6
Rye	59	1.47
Barley	84.5	2.11

4. *Value of land and machinery used.*

	Value 40 acres.	Value one acre.
Land	\$2,099.50	\$52.49
Machinery	146.73	3.67

5. *Yield 1896 and average for 5 years.*

	Bushels, 40 acres, 1896.	Bushels, 1 acre, 1896.	Bushels, 40 acres 5 years.	Bushels, acre, 5 years.
Wheat	702	17.5	717	17.9
Oats	1,714	42.8	1,634	40.8
Rye	842	21.0	824	20.6
Barley	1,265	31.6	1,205	30.1
Corn	1,755	43.9	1,596	39.9

In the two preceding tables is presented the greater part of the data upon which the "cost of production" and "value of products" as shown in tables 4, 8, 12, 16, 20 have been computed.

Table I contains 40 presentations in each of which are shown, the time required and wages paid per hour for man and team or single man, as the case may be, for plowing, harrowing, and seeding, cutting, shocking, stacking one acre of grain, and for plowing, harrowing, planting, cultivating, cutting one acre of corn; the quantity of seed used per acre in each case of wheat, oats, rye, barley and the value per acre of land and machinery used; the yield per acre in 1896 and the average yield for five years of wheat, oats, rye, barley and corn.

Table II shows the totals and averages in table I. This table is divided into five sub-tables. In 1 and 2 of these sub-tables under "time required and wages per hour" are shown the total number of hours required for each class of labor on 40 acres and the average time per acre and average wage per hour; in 3 under "quantities of seed used" is shown the quantity used for 40 acres and the average per acre of each crop; in 4 under "value of land and machinery used" are shown the total value of 40 acres and the average value per acre in each case of the land and machinery used; in 5 under "yield 1896 and average yield" are shown the total yield 40 acres 1896 and the average yield per acre, the average yearly yield on 40 acres during 5 years and the average per acre of each of the five crops.

As already alluded to these two tables do not include all the data collected or used as a basis for the cost of production and value of product as shown in the tables referred to. Another table was therefore compiled which, while it presents only averages and totals, covers all points inquired about and will be found both complete and reliable. This table is divided into 7 sub-tables and is presented on the next two pages.

FACTORS OF COST AND VALUE IN PRODUCING GRAIN.

On these two pages are presented in seven sections the data from which the "cost of production" and "value of products" as shown in tables VIII-XX inclusive have been computed. This data was obtained directly from farmers. In section 1 is shown the rate of wages paid per day and month for labor and team work with or without board included. In section 2 is shown the average time needed per acre for properly performing the different parts of the work involved from the time the soil is prepared for seed until the time of threshing. Section 3 shows the data upon which the expenses of threshing, marketing and seed are based. Section 4 shows the number of acres under cultivation and not under cultivation, respectively, owned or controlled by the farmers reporting and the value per acre in each case and the average value per acre. Section 5 shows the total value of the machinery used and the value of the same to each acre under cultivation, and the total value of the horses used and the average to each acre owned or controlled. Section 6 shows the data upon which taxes, the cost of maintaining horses and the cost of fertilizing are based.

In section 7 is presented the data from which the "value of products" was arrived at or the yield in bushels per acre and the prices per bushel, also the value per acre of the accompanying straw or stalk. As regards the value of straw and stalks two estimates are given: one giving their value as compared with the commercial value of other products used for the same purpose; the other giving the value reported by the farmers.

For details of the greater part of the averages shown here see the preceding table.

COST OF PRODUCTION.

41

1. Wages paid per day and month.

ITEMS.	WITH BOARD.		WITHOUT BOARD.		DIFFERENCE.	
	Day.	Month.	Day.	Month.	Day.	Month.
Man and team of two horses.	1.78	\$37 20	\$2.35	\$52 25	.....	.....
Labor .....	.90	18 35	1.22	26 93	.....	.....
Team of two horses .....	.88	18 85	1.13	25 32	.....	.....

2. Time needed for doing the different parts of the work involved.

ITEMS.	Acres per day.	Hours per acre.	ITEMS.		Acres per day.	Hours per acre.
Plowing, man and team.....	2.17	4.62	Planting corn, one man and team		7.62	1.32
Harrowing for grain, man and team	5.55	1.80	Planting corn, one man, hand		3.77	2.65
Harrowing for corn, man and team	4.52	2.21	Cultivating corn, one man and team		1.46	6.84
Seeding grain, man and team	10.00	1.00	Cutting corn, two men and team		5.62	1.79
Cutting grain, man and team	9.80	1.02	Cutting corn, one man, hand		1.30	7.70
Shocking grain, one man.....	7.13	1.39	Cutting corn, average Table I		1.66	6.00
Stacking grain, two men	6.50	1.53	Husking corn, one man, hand		1.03	9.70

3. Threshing, marketing and seed.

ITEMS.	THRESHING.			MARKETING.			SEED PER ACRE.		
	Bushels per day.	No. of men employed.	Cost per bushel for machine.	Ave. No. of miles hauling.	Loads per day.	Bushels per load.	Bushels	Price.	
								1896.	5 yrs.
Wheat	1050	12	1.30	5.4	2.30	45	1.8	\$.70	\$.70
Corn, shelling			1.70	5.4	2.30	50	2.8	.35	.40
Oats	1750	12	.50	5.4	2.30	75	2.6	.30	.35
Rye	1050	12	1.00	5.4	2.30	50	1.6	.45	.50
Barley	1100	12	1.00	5.4	2.30	65	2.2	.40	.4

4. Acres in farms, value per acre.

ITEMS.	Acres under cultivation.	Acres not under cultivation.	Total, and average.
Acres controlled by the forty farmers reporting	3,549	2,372	5,920
Value per acre and average value	\$52 50	\$32.82	\$44.5

5. Value of machinery and horses used.

ITEMS.	Value per acre.	Total value.
Machinery: Value per acre under cultivation and total value ..	\$3.67	\$13,045
Horses: Value per acre controlled and total value	1.32	7,800

6. Other items and factors of expense.

ITEMS.	Per acre.	Total.
Taxes: Amount per acre controlled and total paid	25.3	\$4.98
Maintenance of horses: Cost per acre controlled, total cost	79.4	46.80
Manures: Loads per acre under cultivation, total loads	2.15	76.20
Manures: Cost per load when bought \$0.85, labor cost		33 cts.
Horses: Total number used 130, average value		\$60.00

7. Yield per acre. Price per bushel. Value of straw per acre.

ITEMS.	YIELD. PRICE.		YIELD. PRICE.		VALUE OF STRAW.	
	1896.		Average 5 yrs.		Estimated feed and fert. stuff.	Reported by farmers.
	Bush.	Cents.	Bush.	Cents.		
Wheat yield. Price value of straw	17.5	64.3	18.0	60.4	\$2 48	\$1 55
Corn yield. Price value of straw ..	43.9	24.8	39.9	35.4	6 23	3 25
Oats yield. Price value of straw ..	42.8	17.1	40.9	27 3	4 83	2 45
Rye yield. Price value of straw ..	21.	34.1	20 6	46.9	3 19	2 10
Barley yield. Price value of straw	31.4	28.7	30.	44.9	4 14	1 65

WHEAT—TABLE IV.

Cost of production and value of products of 40 acres of wheat.

OFFICE NO.	PLOWING.				HARROWING AND SEEDING.				CUTTING.			
	Cost per acre and bushel.				Cost per acre and bushel.				Cost per acre and bushel.			
	Acres 1896 \$	Bush 1896 Cts.	Acres 5 years \$	Bush 5 years Cts.	Acres 1896 \$	Bush 1896 Cts.	Acres 5 years \$	Bush 5 years Cts.	Acres 1896 \$	Bush 1896 Cts.	Acres 5 years \$	Bush 5 years Cts.
1.....	1.00	6.67	1.00	5.26	.65	4.33	.65	3.42	.25	1.67	.25	1.32
2.....	1.40	7.77	1.40	8.24	.90	5.00	.90	5.29	.30	1.67	.30	1.77
3.....	1.00	3.84	1.00	5.00	.55	2.11	.55	2.76	.30	1.15	.30	1.50
4.....	.85	5.00	.85	5.31	.63	3.70	.63	3.94	.25	1.47	.25	1.56
5.....	1.00	5.00	1.00	4.56	.50	2.50	.50	2.28	.25	1.25	.25	1.14
6.....	.80	5.00	.80	4.70	.45	2.81	.45	2.64	.18	1.13	.18	1.06
7.....	1.00	5.00	1.00	5.56	.75	3.85	.77	4.28	.20	1.00	.20	1.11
8.....	1.00	3.33	1.00	3.70	.50	1.67	.50	1.85	.25	.83	.25	.93
9.....	.75	5.00	.75	4.17	.63	4.20	.63	3.50	.25	1.67	.25	1.39
10.....	1.60	13.33	1.60	10.00	.90	7.49	.90	5.63	.30	2.50	.30	1.87
11.....	1.35	9.00	1.35	7.94	.68	4.53	.68	4.00	.27	1.80	.27	1.59
12.....	1.00	5.00	1.00	5.06	.65	3.25	.65	3.25	.15	.76	.15	.75
13.....	1.50	8.34	1.50	8.82	.72	4.00	.72	4.22	.30	1.67	.30	1.76
14.....	1.16	5.80	1.16	4.83	1.07	6.35	1.07	4.46	.44	2.20	.44	1.83
15.....	1.00	4.00	1.00	3.57	.50	2.00	.50	1.78	.20	.80	.20	.71
16.....	2.00	11.11	2.00	11.11	1.08	6.00	1.08	6.00	.45	2.50	.45	2.50
17.....	1.00	5.00	1.00	5.88	.55	2.75	.55	3.23	.20	1.00	.20	1.18
18.....	1.00	5.88	1.00	6.25	.40	2.36	.40	2.50	.20	1.18	.20	1.25
19.....	1.25	6.25	1.25	6.95	.75	3.75	.75	4.17	.27	1.35	.27	1.50
20.....	1.00	10.00	1.00	6.67	.70	7.00	.70	4.67	.30	3.00	.30	2.00
21.....	1.20	6.67	1.20	7.50	.55	3.07	.55	3.44	.30	1.67	.30	1.87
22.....	1.24	5.17	1.24	4.59	.64	2.67	.64	2.36	.27	1.12	.27	1.00
23.....	1.37	9.13	1.37	7.61	.82	5.46	.82	4.56	.37	2.47	.37	2.05
24.....	1.20	6.67	1.20	7.50	.98	5.45	.98	6.13	.25	1.38	.25	1.56
25.....	1.00	5.00	1.00	5.55	.57	2.85	.57	3.16	.20	1.00	.20	1.12
26.....	1.00	6.25	1.00	6.25	.50	3.12	.50	3.12	.20	1.25	.20	1.25
27.....	1.13	7.06	1.13	7.06	.50	3.12	.50	3.12	.23	1.44	.23	1.44
28.....	1.00	10.00	1.00	9.09	.70	7.00	.70	6.36	.25	2.50	.25	2.28
29.....	1.00	10.00	1.00	10.00	.65	6.50	.65	6.50	.42	4.20	.42	4.20
30.....	1.00	6.25	1.00	6.25	.63	3.94	.63	3.94	.30	1.88	.30	1.88
31.....	1.25	6.58	1.25	5.68	.63	3.31	.63	2.86	.30	1.58	.30	1.36
32.....	1.00	6.67	1.00	7.14	.60	4.00	.60	4.28	.25	1.67	.25	1.79
33.....	1.50	9.38	1.50	9.38	.60	3.76	.60	3.76	.30	1.88	.30	1.88
34.....	1.25	7.81	1.25	5.95	.59	3.68	.59	2.81	.25	1.56	.25	1.19
35.....	1.00	6.67	1.00	7.69	.60	4.00	.60	4.61	.20	1.33	.20	1.54
36.....	.84	5.25	.84	5.60	.66	4.12	.66	4.40	.30	1.87	.30	2.00
37.....	1.13	7.06	1.13	7.53	.52	3.26	.52	3.47	.25	1.56	.25	1.67
38.....	1.25	6.94	1.25	7.35	1.07	5.95	1.07	6.29	.25	1.39	.25	1.47
39.....	1.25	6.25	1.25	5.21	.55	2.75	.55	2.29	.25	1.25	.25	1.04
40.....	.86	5.38	.86	5.73	.52	3.26	.52	3.48	.23	1.44	.23	1.54
Total 40 acres...	45.13	270.51	45.13	262.17	26.46	159.92	26.46	154.80	10.68	65.03	10.68	62.85
Average one acre.....	1.128	6.763	1.128	6.554	.661	3.99	.661	3.89	.267	1.626	.267	1.571

WHEAT—TABLE IV, continued.

Cost of production and value of products of 40 acres of wheat.

OFFICE NO.	FERTILIZING.				SEED.				SHOCKING AND STACKING.			
	Cost per acre and bushel.				Cost per acre and bushel.				Cost per acre and bushel.			
	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years
	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.
1.....	2.50	16.67	2.50	13.16	1.01	6.73	.99	5.21	.68	4.53	.68	3.67
2.....	2.60	14.44	2.60	15.28	1.10	6.11	.91	5.36	1.20	6.67	1.20	7.06
3.....	2.50	9.61	2.50	12.50	1.05	4.00	.97	4.35	.83	3.21	.83	4.15
4.....	3.00	17.64	3.00	18.75	1.05	6.18	1.05	6.56	.50	2.94	.50	3.33
5.....	3.00	15.00	3.00	13.62	.93	4.65	.90	4.09	.84	4.20	.84	3.81
6.....	2.50	15.63	2.50	14.70	1.20	7.50	1.14	6.70	.70	4.38	.70	4.12
7.....	3.00	15.00	3.00	16.66	1.12	5.89	1.08	6.00	.60	3.00	.60	3.34
8.....	3.00	10.00	3.00	11.11	1.40	4.67	1.20	4.45	.90	3.00	.90	3.84
9.....	2.50	16.67	2.50	13.89	.90	6.00	1.00	5.56	.54	4.69	.54	3.00
10.....	2.50	20.84	2.50	15.62	1.30	10.84	1.20	7.50	.81	6.75	.81	6.06
11.....	2.50	16.67	2.50	14.70	.90	6.00	.87	5.12	.81	5.40	.81	4.16
12.....	3.00	15.00	3.00	15.00	1.20	6.00	1.26	6.30	.95	4.75	.95	4.75
13.....	2.50	13.88	2.50	14.70	1.28	7.12	1.16	6.33	.95	5.28	.95	5.59
14.....	2.50	12.50	2.50	10.42	1.20	6.00	1.30	5.42	.65	2.75	.65	2.29
15.....	3.00	12.00	3.00	10.71	1.16	4.64	1.16	4.15	.76	3.00	.75	2.63
16.....	2.50	13.89	2.50	13.89	.90	5.00	.90	5.00	.73	4.06	.73	4.06
17.....	2.50	12.50	2.50	14.70	.93	4.65	.89	5.24	.59	2.95	.59	3.47
18.....	2.50	14.70	2.50	15.63	.87	5.12	.86	5.37	.48	2.82	.48	3.00
19.....	3.00	15.00	3.00	16.67	1.28	6.40	1.18	6.56	.45	2.25	.45	2.50
20.....	2.00	20.00	2.00	13.33	1.14	11.40	1.02	6.30	.84	8.40	.84	6.60
21.....	2.50	13.89	2.50	15.63	.82	4.55	.77	4.81	.65	3.61	.65	4.06
22.....	2.50	10.42	2.50	9.26	1.20	5.00	1.12	4.14	.55	2.29	.55	2.03
23.....	2.00	13.34	2.00	11.11	1.40	9.34	1.26	7.00	.47	3.13	.47	2.61
24.....	1.75	9.73	1.75	10.93	.96	5.33	.85	5.31	.88	4.89	.88	5.60
25.....	2.50	12.50	2.50	13.89	.91	4.55	.85	4.73	.85	4.25	.85	4.73
26.....	2.75	17.19	2.75	17.19	.90	5.62	.87	5.43	.90	5.62	.90	5.62
27.....	2.50	15.62	2.50	15.62	1.24	7.75	1.16	7.26	.86	5.37	.86	5.37
28.....	1.50	15.00	1.50	13.64	1.05	10.50	.95	8.64	.78	7.80	.78	7.09
29.....	2.50	25.00	2.50	25.00	.75	7.50	.85	8.60	1.00	70.00	1.00	15.00
30.....	2.50	15.62	2.50	15.62	.82	5.12	.82	5.12	.60	3.75	.60	3.75
31.....	2.20	11.58	2.20	10.00	.88	4.63	.80	3.64	.78	4.11	.78	3.55
32.....	2.50	16.67	2.50	17.86	.98	6.53	.89	6.36	.35	2.33	.35	2.60
33.....	2.50	15.62	2.50	15.62	1.20	7.50	1.20	7.50	.64	4.00	.64	4.00
34.....	1.50	9.38	1.50	7.14	.93	5.81	.90	4.29	.70	4.38	.70	3.33
35.....	2.50	16.67	2.50	19.24	1.40	9.33	1.07	8.24	.86	5.73	.86	6.61
36.....	2.50	15.62	2.50	16.67	1.05	6.57	.90	6.00	.58	3.62	.58	3.86
37.....	1.75	10.94	1.75	11.66	.96	6.00	.93	6.20	.75	4.68	.75	6.00
38.....	2.50	13.89	2.50	14.70	1.50	8.33	1.20	7.05	.76	4.16	.75	4.41
39.....	1.60	8.00	1.60	6.66	1.05	5.25	1.02	4.25	1.00	5.00	1.00	4.17
40.....	2.50	15.62	2.50	16.66	1.12	7.00	.90	6.00	.41	2.56	.41	2.74
Total 40 acres...	98.15	579.94	98.15	569.14	43.04	256.85	40.35	233.54	29.06	176.22	29.06	170.21
Average one acre....	2.454	14.50	2.45	14.23	1.07	6.42	1.009	5.84	.726	4.40	.726	4.26

WHEAT—TABLE IV, continued.

Cost of production and value of products of 40 acres of wheat.

OFFICE NO.	THRESHING.				MARKETING.				INTEREST.			
	Cost per acre and bushel.				Cost per acre and bushel.				Cost per acre and bushel.			
	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years
\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	
1.....	.45	3.00	.57	3.00	.15	1.00	.19	1.00	3.60	24.00	3.60	18.95
2.....	.45	2.50	.42	2.50	.09	.50	.08	.50	3.72	20.66	3.72	21.88
3.....	.78	3.00	.60	3.00	.39	1.50	.30	1.50	3.84	14.77	3.84	19.20
4.....	.51	3.00	.48	3.00	.51	3.00	.48	3.00	1.80	10.59	1.80	11.25
5.....	.60	3.00	.66	3.00	.40	2.00	.44	2.00	2.70	13.50	2.70	12.28
6.....	.48	3.00	.51	3.00	.80	5.00	.85	5.00	1.50	9.37	1.50	8.83
7.....	.40	2.00	.36	2.00	.60	3.00	.54	3.00	3.00	15.00	3.00	16.66
8.....	.90	3.00	.81	3.00	.30	1.00	.27	1.00	3.60	12.00	3.60	13.33
9.....	.30	2.00	.36	2.00	.75	5.00	.90	5.00	1.50	10.00	1.50	8.34
10.....	.24	2.00	.32	2.00	.24	2.00	.32	2.00	1.80	15.00	1.80	11.25
11.....	.45	3.00	.51	3.00	.60	4.00	.68	4.00	2.40	16.00	2.40	14.11
12.....	.40	2.00	.40	2.00	.50	2.50	.50	2.50	3.00	15.00	3.00	15.00
13.....	.54	3.00	.51	3.00	.54	3.00	.51	3.00	4.80	26.67	4.80	28.24
14.....	.60	3.00	.72	3.00	.40	2.00	.48	2.00	4.20	21.00	4.20	17.50
15.....	.75	3.00	.84	3.00	.75	3.00	.84	3.00	4.38	17.52	4.38	15.65
16.....	.54	3.00	.54	3.00	.36	2.00	.36	2.00	2.70	15.00	2.70	15.00
17.....	.50	2.50	.42	2.47	.60	3.00	.51	3.00	1.50	7.50	1.50	8.82
18.....	.51	3.00	.48	3.00	.34	2.00	.32	2.00	1.20	7.45	1.20	7.50
19.....	.60	3.00	.54	3.00	.60	3.00	.54	3.00	3.48	17.40	3.48	19.33
20.....	.25	2.50	.38	2.53	.15	1.50	.22	1.47	1.08	10.80	1.08	7.20
21.....	.54	3.00	.48	3.00	.27	1.50	.24	1.50	3.00	16.67	3.00	18.75
22.....	.72	3.00	.81	3.00	.60	2.50	.68	2.55	3.00	12.50	3.00	11.11
23.....	.30	2.00	.36	2.00	.30	2.00	.36	2.00	4.50	30.00	4.50	25.00
24.....	.45	2.50	.40	2.50	.36	2.00	.32	2.00	2.40	13.33	2.40	15.00
25.....	.60	3.00	.54	3.00	.20	1.00	.18	1.00	3.90	19.50	3.90	21.67
26.....	.56	3.50	.56	3.50	.32	2.00	.32	2.00	3.42	21.38	3.42	21.38
27.....	.24	1.50	.24	1.50	.32	2.00	.32	2.00	2.70	16.87	2.70	16.87
28.....	.15	1.50	.16	1.50	.05	.50	.06	.50	3.60	36.00	3.60	32.72
29.....	.20	2.00	.20	2.00	.20	2.00	.20	2.00	3.18	31.80	3.18	31.80
30.....	.24	1.50	.24	1.50	.16	1.00	.16	1.00	3.60	22.50	3.60	22.50
31.....	.48	2.53	.55	2.50	.38	2.00	.44	2.00	4.50	23.68	4.50	20.45
32.....	.45	3.00	.42	3.00	.53	3.53	.49	3.50	1.80	12.00	1.80	12.86
33.....	.48	3.00	.48	3.00	.24	1.50	.24	1.50	3.30	20.62	3.30	20.62
34.....	.40	2.50	.53	2.50	.48	3.00	.63	3.00	3.12	19.50	3.12	14.86
35.....	.45	3.00	.39	3.00	.45	3.00	.39	3.00	3.90	26.00	3.90	30.00
36.....	.48	3.00	.45	3.00	.48	3.00	.45	3.00	3.75	23.44	3.75	25.00
37.....	.48	3.00	.45	3.00	.16	1.00	.15	1.00	3.96	24.75	3.96	26.40
38.....	.63	3.50	.58	3.42	.45	2.50	.42	2.45	3.60	20.00	3.60	21.18
39.....	.30	1.50	.36	1.50	.40	2.00	.48	2.00	5.70	28.50	5.70	23.75
40.....	.48	3.00	.45	3.00	.48	3.00	.45	3.00	3.24	20.25	3.24	21.60
Total 40 acres...	18.88	106.03	19.08	105.92	15.90	91.03	16.31	90.97	125.97	738.12	125.97	723.84
Average one acre.....	.472	2.65	.477	2.648	.397	2.266	.408	2.267	3.149	18.45	3.149	18.09

WHEAT—TABLE IV, continued.

Cost of production and value of products of 40 acres of wheat.

OFFICE NO.	WEAR AND TEAR.				TAXES.				OTHER EXPENSES.			
	Cost per acre and bushel.				Cost per acre and bushel.				Cost per acre and bushel.			
	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years
	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.
1	.60	4.00	.60	3.15	.25	1.67	.25	1.32	.50	3.33	.50	2.64
2	.60	8.33	.60	3.52	.25	1.39	.25	1.47	.50	2.79	.50	2.95
3	.25	.96	.25	1.25	.25	.96	.25	1.25	.50	1.93	.50	2.50
4	.34	2.00	.34	2.12	.25	1.47	.25	1.56	.50	2.95	.50	3.13
5	.33	1.65	.33	1.50	.25	1.25	.25	1.14	.50	2.50	.50	2.27
6	.33	2.06	.33	1.94	.25	1.56	.25	1.47	.50	3.12	.50	2.95
7	.23	1.15	.23	1.29	.25	1.25	.25	1.38	.50	2.50	.50	2.77
8	.30	1.00	.30	1.11	.25	.83	.25	.92	.50	1.67	.50	1.85
9	.17	1.13	.17	.94	.25	1.66	.25	1.38	.50	3.33	.50	2.77
10	.15	1.25	.15	.94	.25	2.08	.25	1.56	.50	4.17	.50	3.13
11	.33	2.20	.33	1.94	.25	1.67	.25	1.47	.50	3.33	.50	2.95
12	.40	2.00	.40	2.00	.25	1.25	.25	1.25	.50	2.50	.50	2.50
13	.20	1.11	.20	1.18	.25	1.38	.25	1.47	.50	2.77	.50	2.95
14	.50	2.50	.50	2.08	.30	1.50	.30	1.25	.50	2.50	.50	2.08
15	.58	2.32	.58	2.07	.30	1.20	.30	1.07	.50	2.00	.50	1.78
16	.47	2.62	.47	2.62	.25	1.38	.25	1.38	.50	2.77	.50	2.77
17	.25	1.25	.25	1.47	.25	1.25	.25	1.47	.50	2.50	.50	2.95
18	.27	1.58	.27	1.68	.25	1.48	.25	1.56	.50	2.94	.50	3.13
19	.60	3.00	.60	3.33	.25	1.25	.25	1.38	.50	2.50	.50	2.77
20	.22	2.20	.22	1.47	.25	2.50	.25	1.66	.50	6.00	.50	3.33
21	.33	1.83	.33	2.06	.25	1.38	.25	1.56	.50	2.77	.50	3.13
22	.23	.95	.23	.85	.25	1.04	.25	.92	.50	2.09	.50	1.85
23	.59	3.33	.50	2.78	.25	1.67	.25	1.38	.50	3.33	.50	2.78
24	.38	2.11	.38	2.38	.25	1.39	.25	1.56	.50	2.77	.50	3.13
25	.40	2.00	.40	2.22	.25	1.25	.25	1.38	.50	2.50	.50	2.77
26	.27	1.68	.27	1.68	.25	1.56	.25	1.56	.50	3.14	.50	3.14
27	.16	1.00	.16	1.00	.25	1.56	.25	1.66	.50	3.12	.50	3.12
28	.17	1.70	.17	1.54	.25	2.60	.25	2.27	.50	5.00	.50	4.55
29	.35	3.50	.35	3.50	.25	2.50	.25	2.50	.50	5.00	.50	5.00
30	.13	.81	.13	.81	.25	1.56	.25	1.56	.50	3.13	.50	3.13
31	.07	.37	.07	.32	.25	1.31	.25	1.14	.50	2.63	.50	2.27
32	.24	1.60	.24	1.71	.25	1.67	.25	1.78	.50	3.33	.50	3.57
33	.43	2.68	.43	2.68	.25	1.56	.25	1.66	.50	6.12	.50	6.12
34	.49	3.06	.49	2.33	.25	1.56	.25	1.19	.50	6.13	.50	2.39
35	.22	1.47	.22	1.69	.25	1.67	.25	1.92	.50	3.33	.50	6.84
36	.50	3.13	.50	3.33	.25	1.57	.25	1.67	.50	3.12	.50	3.33
37	.75	4.68	.75	5.00	.25	1.57	.25	1.67	.50	3.12	.50	3.33
38	1.00	5.55	1.00	5.89	.25	1.39	.25	1.48	.50	2.78	.50	2.95
39	.80	4.00	.80	3.33	.25	1.25	.25	1.04	.50	2.50	.50	2.09
40	.10	.62	.10	.66	.25	1.56	.25	1.66	.50	3.12	.50	3.33
Total 40 acres....	14.64	85.38	14.64	83.36	10.10	60.50	10.10	58.77	20.00	120.13	20.00	116.99
Average one acre.	.366	2.134	.366	2.084	.252	1.512	.252	1.469	.500	3.003	.500	2.925

WHEAT—TABLE IV, continued.

Cost of production and value of products of 40 acres of wheat.

OFFICE NO.	TOTAL COST OF RAISING PRODUCTS.				VALUE OF STRAW.				VALUE OF GRAIN.			
	Total cost per acre and bushel.				Value per acre and bushel.				Value per acre and bushel			
	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years
	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	\$	\$	\$
1.....	11.64	77.60	11.78	62.00	2.42	16.13	2.42	12.73	10.05	.67	12.54	.66
2.....	13.11	72.83	12.88	75.82	2.52	14.00	2.52	14.70	11.34	.63	10.37	.61
3.....	12.24	47.07	11.89	59.45	2.76	10.61	2.76	13.60	14.00	.70	13.00	.65
4.....	10.19	59.94	10.13	63.31	2.40	14.11	2.40	15.00	10.20	.60	9.60	.60
5.....	11.30	56.50	11.37	61.68	3.38	16.90	3.38	15.36	12.40	.62	13.20	.60
6.....	9.69	60.56	9.71	57.11	2.20	13.75	2.20	12.94	9.60	.60	9.69	.57
7.....	11.67	58.35	11.53	64.05	2.31	11.55	2.31	12.83	12.80	.64	13.16	.62
8.....	12.90	43.00	12.58	46.59	3.60	12.00	3.60	13.33	21.00	.70	16.20	.60
9.....	9.04	61.26	9.35	51.94	2.64	17.60	2.64	14.66	9.00	.60	12.06	.67
10.....	10.59	58.25	10.65	66.56	2.50	20.83	2.50	15.62	7.80	.65	9.60	.60
11.....	11.04	73.60	11.15	65.58	2.60	17.33	2.60	15.29	9.00	.60	9.86	.58
12.....	12.00	60.00	12.06	60.30	3.00	15.00	3.00	15.00	12.00	.60	12.00	.63
13.....	14.08	78.22	13.90	81.76	2.86	15.88	2.86	16.82	11.52	.64	9.86	.58
14.....	13.42	67.10	13.72	57.16	2.97	14.85	2.97	12.37	12.00	.60	15.60	.65
15.....	13.87	55.48	14.05	50.17	2.60	10.40	2.60	9.28	14.50	.68	16.24	.58
16.....	12.48	69.33	12.48	69.33	2.00	11.11	2.00	11.11	10.80	.60	10.80	.60
17.....	9.37	46.85	9.16	53.88	2.40	12.00	2.40	14.11	12.40	.62	10.03	.59
18.....	8.52	60.11	8.46	52.87	2.20	12.94	2.20	13.75	9.66	.58	9.12	.57
19.....	13.03	65.15	12.81	71.16	2.30	11.50	2.30	12.77	12.80	.64	10.62	.59
20.....	8.43	84.30	8.51	56.73	2.00	20.00	2.00	13.33	6.50	.65	8.70	.58
21.....	10.91	60.61	10.77	67.31	2.20	12.22	2.20	13.75	10.95	.61	9.28	.58
22.....	11.70	48.75	11.79	43.66	3.60	15.00	3.60	13.33	14.40	.60	15.12	.56
23.....	12.78	85.20	12.76	70.88	2.60	17.33	2.60	14.44	10.50	.70	11.34	.63
24.....	10.36	57.55	10.16	63.50	2.40	13.33	2.40	15.00	11.52	.64	9.12	.57
25.....	11.88	59.40	11.74	65.22	2.25	11.25	2.25	12.50	13.60	.68	11.52	.64
26.....	11.57	72.31	11.54	72.12	2.00	12.50	2.00	12.50	9.60	.60	9.28	.58
27.....	10.63	66.41	10.55	65.92	2.20	13.75	2.20	13.75	9.92	.62	9.28	.58
28.....	10.00	100.00	9.92	90.18	1.44	14.40	1.44	13.09	7.00	.70	6.93	.63
29.....	11.00	110.00	11.10	111.00	3.00	30.00	3.00	30.00	6.00	.60	5.70	.57
30.....	10.73	67.06	10.73	67.06	2.60	16.25	2.60	16.25	11.04	.69	11.04	.69
31.....	12.22	64.31	12.27	55.77	2.64	13.89	2.64	12.00	12.54	.66	13.20	.60
32.....	9.45	63.00	9.29	66.35	2.04	13.60	2.04	14.57	9.75	.65	8.26	.59
33.....	11.94	74.62	11.94	74.62	2.00	12.50	2.00	12.50	9.60	.60	9.60	.60
34.....	10.46	65.37	10.71	50.98	2.20	13.75	2.20	10.47	9.92	.62	12.60	.60
35.....	12.33	82.20	11.88	91.38	2.64	17.60	2.64	20.30	12.00	.80	8.19	.63
36.....	11.89	74.31	11.68	77.86	2.20	13.75	2.20	14.66	11.20	.70	9.00	.60
37.....	11.46	71.62	11.39	75.93	2.31	14.43	2.31	15.40	10.24	.64	9.30	.62
38.....	13.75	76.38	13.37	78.64	2.42	13.44	2.42	14.23	13.50	.75	10.20	.60
39.....	13.05	68.25	13.76	67.33	2.53	12.15	2.53	10.54	12.00	.60	13.92	.58
40.....	10.69	66.81	10.41	69.40	2.40	15.00	2.40	16.00	12.00	.75	9.00	.60
Total 40 acres....	458.01	2709.64	455.93	2632.5	99.33	584.63	99.33	569.88	446.85	25.73	434.73	24.18
Average one acre.	11.450	67.74	11.398	65.81	2.48	14.62	2.48	14.25	11.17	.643	10.868	.604

COST OF PRODUCTION.

WHEAT—TABLE IV, continued.

Cost of production and value of products of 40 acres of wheat.

OFFICE NO.	TOTAL VALUE OF PRODUCTS RAISED.				PROFIT.				LOSS.			
	Total value per acre and bushel.				Profit per acre and bushel.				Loss per acre and bushel.			
	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years
	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.
1.....	12.47	83.13	14.96	78.73	.83	5.53	3.18	16.73				
2.....	13.86	77.00	12.89	75.70	.75	4.17	.01					.12
3.....	16.76	80.61	15.76	78.60	4.52	33.54	3.87	19.15				
4.....	12.60	74.11	12.00	75.00	2.41	14.17	1.87	11.69				
5.....	15.78	78.90	16.58	75.36	4.48	22.40	5.21	23.68				
6.....	11.80	73.75	11.89	69.94	2.11	13.19	2.18	12.83				
7.....	15.11	76.55	15.47	74.83	3.44	17.20	3.94	10.78				
8.....	24.60	82.00	19.80	73.33	11.70	39.00	7.22	26.74				
9.....	11.64	77.60	14.70	81.66	2.60	16.34	5.35	29.72				
10.....	10.30	85.83	12.10	75.62			1.45	9.06	.29	2.42		
11.....	11.60	77.33	12.46	73.29	.56	3.73	1.31	7.71				
12.....	15.00	75.00	15.60	78.00	3.00	15.00	3.54	17.70				
13.....	14.38	79.88	12.72	74.82	.30	1.66				1.18		6.94
14.....	14.97	74.85	18.57	77.37	1.55	7.75	4.85	20.21				
15.....	17.10	68.40	18.84	67.28	3.23	12.92	4.79	17.11				
16.....	12.80	71.11	12.80	71.11	.32	1.78	.32	1.78				
17.....	14.80	74.00	12.43	73.11	5.43	27.15	3.27	19.23				
18.....	12.06	70.94	11.32	70.75	3.54	20.83	2.86	17.88				
19.....	15.10	75.50	12.92	71.77	2.07	10.35	.11	.61				
20.....	8.50	85.00	10.70	71.33	.07	.70	2.19	14.60				
21.....	13.15	73.22	11.48	71.75	2.24	12.61	.71	4.44				
22.....	18.00	75.00	18.72	69.33	6.30	26.25	6.93	25.67				
23.....	13.10	87.33	13.94	77.44	.32	2.13	1.18	6.56				
24.....	13.92	77.33	11.52	72.00	3.56	19.78	1.36	8.50				
25.....	15.85	79.25	13.77	76.50	3.97	19.85	2.03	11.28				
26.....	11.60	72.50	11.28	70.50	.08	.19					.26	1.62
27.....	12.12	75.75	11.43	71.75	1.49	9.34	.93	5.83				
28.....	8.44	84.40	8.37	76.09					1.56	15.00	1.56	14.09
29.....	9.00	90.00	8.70	87.00					2.00	20.00	2.40	24.00
30.....	13.64	85.25	13.64	85.25	2.91	18.19	2.91	18.19				
31.....	15.18	79.80	15.84	72.00	2.96	15.58	3.57	16.23				
32.....	11.79	78.60	10.30	73.57	2.34	15.60	1.01	7.22				
33.....	11.60	72.50	11.60	72.50					.34	2.12	.34	2.12
34.....	12.12	75.75	14.80	70.47	1.66	10.38	4.09	19.49				
35.....	14.64	97.60	10.83	83.30	2.31	15.40				1.05		8.08
36.....	13.40	83.75	11.20	74.66	1.51	9.44				.48		3.20
37.....	12.55	78.43	11.61	77.40	1.09	6.81	.22	1.47				
38.....	15.92	88.44	12.62	74.23	2.17	12.06				.76		4.41
39.....	14.53	72.15	16.45	68.54	.88	3.90	2.69	11.21				
40.....	14.40	90.00	11.40	76.00	3.71	23.19	.99	6.60				
Total 40 acres....	546.18	3157.6	543.06	2987.8	92.36	483.11	86.14	419.90	4.19	40.14	8.01	64.58
Average one acre.	13.65	78.94	13.35	74.70	2.309	12.20	2.153	10.49	.105	.100	.200	1.614

TABLE V.—SUMMARY OF TABLE VI.

In the tables on this page have been summarized the results in the foregoing tables. The tables show the total cost of producing 40 acres of wheat and the average cost per acre and bushel, the total value of products of 40 acres and the average value per acre and bushel. In the analysis of expenses, wages was allowed for team work as well as for labor.

(For a more complete analysis of expenses in this case, both when wages is allowed for team work and when horses or their value is treated as capital, see the next two pages.)

Cost of production.

Items.	40 acres, 1896.	One acre.	Bush.	40 acres, 5 years.	One acre.	Bush.
	\$	\$	c	\$	\$	c
Plowing.....	45 13	1.128	6.76	45 13	1.128	6.55
Harrowing and seeding.....	26 46	.661	4.00	26 46	.661	3.87
Cutting.....	10 68	.267	1.63	10 68	.267	1.57
Fertilizing.....	98 15	2.454	14.50	98 15	2.454	14.23
Seed.....	43 04	1.076	6.42	40 35	1.009	5.84
Shocking and stacking.....	29 06	.726	4.40	29 06	.726	4.26
Threshing.....	18 88	.472	2.65	19 08	.477	2.65
Marketing.....	15 90	.398	2.28	16 31	.408	2.27
Interest.....	125 97	3.150	18 45	125 97	3.150	18.09
Wear and tear.....	14 64	.366	2.13	14 64	.366	2.06
Taxes.....	10 10	.252	1.51	10 10	.252	1.47
Other expenses.....	20 00	.500	3.01	20 00	.500	2.93
	458 01	11.450	67.74	455 93	11.398	65.81

Value of products.

Value of grain.....	446 85	11.17	64.30	434 73	10.87	60.45
Value of straw.....	99 33	2.48	14.62	99 33	2.48	14.25
Total value.....	546 18	13.65	78.92	534 06	13.35	74.70

Profit and loss.

Profit.....	92 36	2.309	12.20	86 14	2.153	10.49
Loss.....	4 19	.105	1.01	8 01	.200	1.61
Balance profit.....	88 17	2.204	11.19	78 13	1.953	8.88

TABLE VI.—COST OF PRODUCTION AND VALUE OF 40 ACRES OF WHEAT.

The data upon which the calculations in the tables on this page are based may also be found in tables 1, 2, 3. "Cost of production" is shown in table 1. "Value of products" is shown in table 2. Table 3 shows the surplus value or cost, as the case may be. In table 4 is presented the "Annual Investment" and the respective amounts of interest and necessary profit at 12 per cent. on same and upon the value of the machinery used, and also the "Surplus Value" above the sum of these expenses. It should be noticed that in this presentation wages has been allowed for team work in place of treating horses, or their value, as other capital.

1. Cost of production.

Items.	40 acres.	One acre.	Per bushel. Cents.
1 Plowing..... 185 hours at 23.5 cents	\$43.48	\$1.087	6.06
2 Harrowing, etc..... 72 hours at 23.5 cents	16.92	.423	2.36
3 Seeding..... 40 hours at 23.5 cents	9.40	.235	1.31
4 Cutting..... 41 hours at 23.5 cents	9.64	.241	1.35
5 Shocking..... 55 hours at 12.2 cents	6.71	.168	.94
6 Stacking, man and team..... 61 hours at 23.5 cents	14.34	.358	2.00
7 Stacking, extra help..... 61 hours at 12.2 cents	7.44	.186	1.04
8 Threshing labor..... 82 hours at 12.2 cents	10.00	.250	1.40
9 Threshing machine..... 717 bush. at 1.30 cents	9.32	1.233	1.30
10 Marketing..... 70 hours at 23.5 cents	16.45	.411	2.29
11 Seed..... 72 bush. at 70 cents	50.40	.260	7.03
12 Taxes..... 40 acres at 25.3 cents	10.12	.253	1.41
13 Fertilizing, clover and..... 86 loads manure.....	45.00	1.125	6.27
14 Other expenses..... 40 acres at 50 cents	20.00	.500	2.80
15 Depreciation machinery..... 146.80 dollars at 10 per cent	14.68	.367	2.01
Annual investment.....	\$283.90	\$7.097	139.60
16 Interest machinery..... 146.80 dollars at 6 per cent	8.81	.220	1.23
17 Interest on investment..... 283.90 dollars at 6 per cent	17.03	.426	2.37
18 Interest, land..... 1,750.00 dollars at 6 per cent	106.80	2.670	14.90
Total cost.....	\$416.54	10.413	58.10

Total investment \$2,210.70. Average investment per acre, \$55.27. Team work, 46.9 days Labor, 66.7 days. Value per acre of land, \$44.50.

2. Value of products.

1 717 bushels of wheat at 60.4 cents; av. 5 years.....	\$433.07	\$10.82	60.40
2 40 acres of straw 1.55.....	62.00	1.55	8.65
Total.....	\$495.07	\$12.37	69.05

3. Surplus value.

1 Surplus value—profits.....	78.53	1.957	10.95
------------------------------	-------	-------	-------

Equivalent to 3.55 per cent. on capital invested.

Annual investment, interest and necessary profit at 12 per cent. on same and upon the value of machinery used; also the surplus value of products above the sum of these expenses. (This surplus capitalized at 12 per cent. and credited to the land gives the value of the land for raising wheat.)

Annual investment.....	\$283.90	\$7.097	39.60
Machinery..... \$146.80 at 12 per cent	17.62	.440	2.46
Annual investment..... \$283.90 at 12 per cent	34.07	.852	4.75
Total expenses less rent.....	\$335.59	\$8.389	46.81
*Surplus credited to land.....	159.48	3.987	22.24
	495.07	12.376	69.05

*Capitalized at 12 per cent. equivalent to \$1,329.00 or \$33.22 per acre. This is \$11.28 per acre below the value reported by the farmers.

TABLE VII.—COST OF PRODUCTION AND VALUE OF 40 ACRES OF WHEAT.

The data upon which the calculations in the table on this page are based may also be found in tables 1, 2, 3. "Cost of Production" is shown in table 1. "Value of Product" is shown in table 2. Table 3 shows the "Surplus Value" above cost. In table 4 is shown the "Annual Investment" and the respective amounts of interest and necessary profit at 12 per cent. on same and upon the value of the machinery and horses used, also the surplus value above the sum of these expenses. In this presentation horses, or their value, has been treated as other capital.

1. Cost of production.

Items.		40 acres.	One acre.	Per bushel. Cents.	
1	Plowing.....	185 hours at 12.2 cents	\$22.57	\$.564	3.15
2	Harrowing, etc.....	72 hours at 12.2 cents	8.78	.220	1.22
3	Seeding.....	40 hours at 12.2 cents	4.88	.122	.68
4	Cutting.....	41 hours at 12.2 cents	5.00	.125	.70
5	Shocking.....	55 hours at 12.2 cents	6.71	.168	.94
6	Stacking—labor.....	122 hours at 12.2 cents	14.88	.372	2.07
7	Threshing—labor.....	82 hours at 12.2 cents	10.00	.250	1.40
8	Threshing—machine.....	717 bush. at 1.3 cents	9.32	.233	1.30
9	Marketing.....	70 hours at 12.2 cents	8.54	.213	1.19
10	Seed.....	72 bush. at 70 cents	50.40	1.260	7.03
11	Taxes.....	40 acres at 25.3 cents	10.12	.253	1.44
12	Maintenance of horses	40 acres at 80 cents	32.00	.800	4.46
13	Fertilizing clover and 86 loads manure	40 acres at 50 cents	45.00	1.125	6.27
14	Other expenses.....	40 acres at 50 cents	20.00	.500	2.80
15	Depreciation machinery .	146.80 dollars at 10 per cent	14.68	.367	2.05
16	Depreciation horses.....	52.80 dollars at 10 per cent	5.28	.132	.73
Annual investment.....			\$268.16	\$6.704	37.40
17	Interest machinery.....	146.80 dollars at 6 per cent.....	8.81	.220	1.23
18	Interest horses.....	52.80 dollars at 6 per cent.....	3.17	.079	0.44
19	Interest on investment	268.16 dollars at 6 per cent.....	16.09	.402	2.24
20	Interest land.....	1,790.00 dollars at 6 per cent.....	106.80	2.670	14.90
Total.....			\$403.03	\$10.075	56.21

Total investment, \$2,247.76. Average investment per acre, \$56.19.
Team work, 46.9 days; labor, 66.7 days; value per acre of land, \$44.50.

2. Value of products.

1	717 bush. of wheat at	60.4 Cts.....	\$433.07	\$10.827	60.40
2	40 acres of straw at	\$1.55	62.00	1.550	8.65
			\$495.07	\$12.377	69.05

3. Surplus value.

1	Surplus value—profits	\$92.04	\$23.02	12.84
---	-----------------------------	---------	---------	-------

Equivalent to 4.09 per cent. on capital invested.

Annual investment, interest and necessary profit at 12 per cent. on same and upon the value of machinery and horses used; also the surplus value of products above the sum of these expenses. (This surplus capitalized at 12 per cent. and credited to land gives the value of the land for raising.)

Annual investment.....	\$268.16	\$6.704	37.40	
Machinery.....	\$146.80 at 12 per cent	17.62	4.40	
Horses.....	52.80 at 12 per cent	6.34	1.59	
Annual investment.....	268.16	32.18	8.05	
Total expense less rent	\$924.30	\$8.108	45.24	
Surplus credited to land	* 170.77	4.269	23.81	
		\$495.07	\$12.377	69.05

*Capitalized at 12 per cent. equivalent to \$1,429.08 or \$35.72 per acre. This is \$8.78 per acre below the value reported by the farmers.

In relation to the cost of producing 40 acres of wheat as presented in the four preceding tables it is, perhaps, proper to repeat here a few facts to which attention has already been called.

In table covering six pages, the cost per each acre in detail, the total cost of 40 acres and the average cost per acre are presented. Table 5 is made up of the totals of table 4. Table 6 is a more complete analysis of table 5 including besides the expenses of that table, interest on the value of the machinery used and upon the sum of the annual investments. These items of expenses were added because they are unavoidable in farming and constitute a proper charge against the products.

It should be noticed that in these three tables the expenses in farming arising from the use of horses for motor power was arrived at by allowing wages, at ruling rates in the respective localities, for team work. It appeared, however, that this is not the proper way in which to treat expenses of this nature. Work horses are usually regarded as capital invested. This being the case, expenses from this source are with a few exceptions similar to the expenses of other capital used and should, therefore, be treated accordingly. Another analysis of the cost of production was therefore made, in which the expenses arising from the horses used were treated from this point of view. This analysis is presented in table 7 and includes in the expenses, wages for man's labor only, while for horses, depreciation and interest on their value and actual yearly cost, per acre, of their maintenance was allowed as expense. This method of treating expenses of this kind does not greatly affect the total cost, but is undoubtedly proper, at least in most cases.

The average cost of growing one acre of wheat as computed from table VII is shown below:

Items.	One acre.	One bush.
	\$	c
Plowing.....	.564	3.15
Harrowing, etc.....	.220	1.22
Seeding.....	.122	.68
Cutting.....	.125	.70
Shocking.....	.168	.94
Stacking.....	.372	2.07
Threshing—labor.....	.250	1.40
Threshing—machine.....	.233	1.30
Marketing.....	.213	1.19
Seed.....	1.250	7.03
Taxes.....	.253	1.41
Maintenance horses.....	.800	4.46
Fertilizing.....	1.125	6.27
Other expenses.....	.500	2.80
Depreciation machinery.....	.367	2.05
Depreciation horses.....	.132	.73
Annual investment.....	6.704	37.40
Interest machinery.....	.220	1.23
Interest horses.....	.079	.44
Interest annual investment.....	.402	2.24
Interest land.....	2.670	14.90
Total.....	10.075	56.21

OATS—TABLE VIII.

Cost of production and value of products of 40 acres of oats.

OFFICE No.	PLOWING.				HARROWING AND SEEDING.				CUTTING.			
	Cost per acre and bushel.				Cost per acre and bushel.				Cost per acre and bushel.			
	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years
	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.
1.....	1.00	2.50	1.00	1.86	.65	1.63	.65	1.21	.25	.63	.25	.47
2.....	1.40	3.50	1.40	3.89	.90	2.25	.90	2.50	.30	.75	.30	.33
3.....	1.00	1.67	1.00	2.09	.55	.91	.55	1.14	.30	.50	.30	.62
4.....	.85	2.18	.85	2.29	.63	1.61	.63	1.70	.25	.64	.25	.68
5.....	1.00	2.13	1.00	2.50	.50	1.06	.50	1.24	.25	.53	.25	.62
6.....	.80	1.53	.80	1.77	.45	.87	.45	1.00	.18	.35	.18	.40
7.....	1.00	2.50	1.00	2.32	.77	1.92	.77	1.79	.20	.50	.20	.47
8.....	1.00	2.00	1.00	2.42	.50	1.00	.50	1.22	.25	.50	.25	.61
9.....	.75	2.14	.75	2.14	.63	1.79	.63	1.79	.25	.71	.25	.71
10.....	1.60	3.20	1.60	4.00	.90	1.80	.90	2.25	.30	.60	.30	.75
11.....	1.35	3.37	1.35	3.37	.68	1.70	.68	1.70	.27	.67	.27	.67
12.....	1.00	2.50	1.00	2.08	.65	1.63	.65	1.36	.15	.38	.15	.32
13.....	1.50	4.05	1.50	4.17	.72	1.94	.72	2.00	.30	.81	.30	.84
14.....	1.16	2.90	1.16	3.23	1.06	2.65	1.06	2.95	.20	.50	.20	1.23
15.....	1.00	2.50	1.00	2.39	.50	1.25	.50	1.19	.20	.50	.20	.47
16.....	2.00	5.26	2.00	5.00	1.08	2.84	1.08	2.70	.45	1.18	.45	1.13
17.....	1.00	2.78	1.00	3.33	.55	1.53	.55	1.84	.20	.55	.20	.67
18.....	1.00	2.86	1.00	3.13	.40	1.14	.40	1.24	.20	.57	.20	.62
19.....	1.25	2.50	1.25	3.43	.75	1.60	.75	2.02	.27	.54	.27	.72
20.....	1.00	2.00	1.00	2.23	.70	1.40	.70	1.55	.30	.60	.30	.66
21.....	1.20	3.00	1.20	3.16	.55	1.38	.55	1.45	.30	.86	.30	.79
22.....	1.24	3.10	1.24	2.88	.64	1.61	.64	1.49	.27	.67	.27	.63
23.....	1.37	2.74	1.37	2.36	.82	1.64	.82	1.42	.37	.74	.37	.63
24.....	1.20	2.67	1.20	3.00	.98	2.17	.98	2.45	.25	.56	.25	.63
25.....	1.00	2.50	1.00	2.63	.57	1.42	.57	1.50	.20	.50	.20	.54
26.....	1.00	2.32	1.00	2.22	.50	1.16	.50	1.12	.20	.46	.20	.44
27.....	1.13	2.82	1.13	2.82	.50	1.25	.50	1.25	.23	.27	.23	.57
28.....	1.00	2.50	1.00	2.50	.70	1.75	.70	1.75	.25	.62	.25	.62
29.....	1.00	2.86	1.00	2.86	.65	1.85	.65	1.85	.42	.42	.42	1.20
30.....	1.00	2.86	1.00	2.63	.63	1.79	.63	1.65	.30	.75	.30	.79
31.....	1.25	2.50	1.25	2.98	.63	1.26	.63	1.49	.30	.60	.30	.72
32.....	1.00	2.38	1.00	2.50	.60	1.42	.60	1.50	.25	.59	.25	.62
33.....	1.50	3.00	1.50	3.41	.60	1.20	.60	1.36	.30	.60	.30	.68
34.....	1.25	3.58	1.25	3.48	.59	1.68	.59	1.63	.25	.71	.25	.69
35.....	1.00	2.50	1.00	2.70	.60	1.50	.60	1.62	.20	.50	.20	.53
36.....	.84	2.40	.84	2.15	.66	1.63	.66	1.69	.30	.87	.30	.76
37.....	1.13	2.26	1.13	2.69	.52	1.04	.52	1.25	.25	.50	.25	.59
38.....	1.25	3.12	1.25	2.66	1.07	2.68	1.07	2.27	.25	.62	.25	.53
39.....	1.25	2.08	1.25	2.77	.55	.92	.55	1.22	.25	.42	.25	.56
40.....	.86	1.91	.86	2.05	.52	1.15	.52	1.25	.23	.51	.23	.54
Total 40 acres....	45.13	107.17	45.13	112.08	23.45	63.22	26.45	65.60	10.68	25.46	10.68	26.55
Average one acre.	1.128	2.679	1.128	2.802	.661	1.580	.661	1.640	.267	.636	.267	.663

OATS—TABLE VIII, continued.

Cost of production and value of products of 40 acres of oats.

OFFICE No.	FERTILIZING.				SEED.				SHOCKING AND STACKING.			
	Cost per acre and bushel.				Cost per acre and bushel.				Cost per acre and bushel.			
	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years
	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.
1.....	3.00	7.50	3.00	5.55	.40	1.00	.78	1.44	.68	1.70	.68	1.26
2.....	2.20	5.50	2.20	6.11	.35	.88	.72	2.00	1.20	3.00	1.20	3.34
3.....	2.30	3.80	2.30	4.79	.40	.67	.75	1.56	.83	1.39	.83	1.73
4.....	2.50	6.41	2.50	6.76	.45	1.16	.65	1.76	.60	1.28	.50	1.35
5.....	6.00	6.38	3.00	7.50		.77	.52	1.30	.84	1.79	.84	2.10
6.....	3.00	5.77	3.00	6.66	.45	.86	.65	1.45	.70	1.34	.70	1.55
7.....	3.00	7.50	3.00	6.98	.54	1.35	.81	1.88	.60	1.50	.60	1.39
8.....	3.00	6.00	3.00	7.31	.54	1.08	.78	1.90	.90	1.80	.90	2.19
9.....	3.00	8.57	3.00	8.57	.40	1.14	.56	1.60	.54	1.55	.54	1.55
10.....	3.00	6.00	3.00	7.50	.51	1.02	.75	1.88	.81	1.62	.81	2.03
11.....	2.50	6.25	2.50	6.25	.45	1.13	.62	1.55	.81	2.03	.81	2.03
12.....	3.00	7.50	3.00	6.25	.50	1.25	.92	1.91	.95	2.37	.95	1.98
13.....	2.20	5.96	2.20	6.11	.45	1.21	.78	2.16	.95	2.58	.95	2.64
14.....	2.25	5.62	2.25	6.25	.45	1.13	.81	2.23	.65	1.37	.55	1.63
15.....	2.40	6.00	2.40	6.71	.45	1.13	.81	1.92	.75	1.87	.75	1.78
16.....	2.00	5.26	2.00	5.00	.54	1.42	.81	2.03	.73	1.92	.73	1.82
17.....	2.50	6.94	2.50	8.33	.32	.89	.54	1.80	.59	1.63	.59	1.96
18.....	2.50	7.14	2.50	7.81	.36	1.03	.52	1.63	.48	1.38	.48	1.50
19.....	2.50	5.00	2.50	6.75	.60	1.20	.95	2.56	.40	.90	.45	1.21
20.....	2.60	5.00	2.60	5.76	.44	.88	.70	1.56	.84	1.68	.84	1.87
21.....	2.85	7.12	2.85	7.50	.40	1.00	.45	1.19	.65	1.62	.65	1.71
22.....	2.80	7.00	2.80	6.51	.48	1.20	.84	1.95	.55	1.37	.55	1.28
23.....	2.80	5.60	2.80	4.83	.51	1.02	.81	1.39	.47	.94	.47	.82
24.....	1.60	3.56	1.60	4.00	.48	1.07	.84	2.10	.87	1.92	.87	2.17
25.....	2.00	5.00	2.00	5.26	.40	1.00	.70	1.84	.85	2.13	.85	2.24
26.....	2.50	5.82	2.50	5.55	.45	1.05	.39	.86	.90	2.09	.90	2.00
27.....	2.60	6.50	2.60	6.50	.45	1.13	.72	1.80	.86	2.15	.86	2.15
28.....	2.80	7.00	2.80	7.00	.45	1.12	.68	1.70	.78	1.95	.78	1.95
29.....	1.75	5.00	1.75	5.00	.32	.91	.54	1.54	1.00	2.86	1.00	2.86
30.....	2.00	5.72	2.00	5.26	.45	1.28	.70	1.84	.60	1.72	.60	1.58
31.....	1.65	3.30	1.65	3.93	.43	.86	.40	.95	.78	1.56	.78	1.86
32.....	3.60	8.57	3.60	9.00	.45	1.07	.39	.97	.35	.85	.35	.89
33.....	2.50	5.00	2.50	5.68	.43	.86	.65	1.48	.64	1.28	.64	1.45
34.....	1.80	5.14	1.80	5.00	.62	1.78	.63	1.75	.70	2.00	.70	1.94
35.....	2.25	5.62	2.25	6.08	.54	1.35	.84	2.27	.86	2.15	.86	2.32
36.....	1.75	5.00	1.75	4.48	.45	1.28	.70	1.79	.58	1.66	.58	1.50
37.....	2.50	5.00	2.50	5.95	.48	.96	.78	1.85	.75	1.50	.75	1.79
38.....	2.00	5.00	2.00	4.25	.45	1.13	.70	1.49	.75	1.88	.75	1.59
39.....	2.00	3.33	2.00	4.44	.38	.63	.68	1.52	1.00	1.67	1.00	2.22
40.....	2.50	5.56	2.50	5.95	.23	.51	.68	1.62	.41	.91	.41	.98
Total 40 acres...	98.70	234.18	98.70	244.12	17.81	42.41	27.55	68.02	29.05	68.91	29.05	72.11
Average one acre.	2.468	5.854	2.468	6.103	.445	1.060	.688	1.700	.726	1.723	.726	1.803

OATS—TABLE VIII, continued.

Cost of production and value of products of 40 acres of oats.

OFFICE NO.	THRESHING.				MARKETING.				INTEREST.			
	Cost per acre and bushel.				Cost per acre and bushel.				Cost per acre and bushel.			
	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years
	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.
1.....	.60	1.50	.81	1.50	.60	1.50	.81	1.50	3.60	9.00	3.60	6.66
2.....	.60	1.50	.54	1.50	.20	.50	.18	.50	3.72	9.30	3.72	10.33
3.....	.90	1.50	.72	1.50	.60	1.00	.48	1.00	3.84	6.40	3.84	8.00
4.....	.78	2.00	.74	2.00	.78	2.00	.74	2.00	1.80	4.61	1.80	4.87
5.....	.94	2.00	.80	2.00	.47	1.00	.40	1.00	2.70	5.74	2.70	6.75
6.....	.78	1.50	.68	1.51	1.30	2.50	1.12	2.49	1.50	2.88	1.50	3.34
7.....	.60	1.50	.64	1.49	.80	2.00	.86	2.00	3.00	7.50	3.00	6.98
8.....	.75	1.50	.62	1.51	.25	.50	.20	.49	3.60	7.20	3.60	8.78
9.....	.52	1.49	.52	1.49	1.05	3.00	1.05	3.00	1.50	4.29	1.50	4.29
10.....	.50	1.00	.40	1.00	.50	1.00	.40	1.00	1.80	3.60	1.80	4.50
11.....	.60	1.50	.60	1.50	.80	2.00	.80	2.00	2.40	6.00	2.40	6.00
12.....	.60	1.50	.72	1.50	.60	1.50	.72	1.50	3.00	7.50	3.00	6.25
13.....	.74	2.00	.72	2.00	.74	2.00	.72	2.00	4.80	12.97	4.80	13.33
14.....	.80	2.00	.72	2.00	.40	1.00	.36	1.00	2.40	10.50	2.40	11.66
15.....	.60	1.50	.63	1.50	.60	1.50	.63	1.50	4.38	10.95	4.38	10.43
16.....	.76	2.00	.80	2.00	.38	1.00	.40	1.00	2.70	7.11	2.70	6.75
17.....	.54	1.50	.45	1.50	.72	2.00	.60	2.00	1.50	4.18	1.50	5.00
18.....	.70	2.00	.64	2.00	.52	1.48	.48	1.50	1.20	3.42	1.20	3.75
19.....	1.00	2.00	.74	2.00	1.00	2.00	.74	2.00	3.48	6.96	3.48	9.40
20.....	.75	1.50	.68	1.52	.25	.50	.23	.52	1.08	2.16	1.08	2.40
21.....	.80	2.00	.76	2.00	.20	.50	.19	.50	3.00	7.50	3.00	7.89
22.....	.60	1.50	.65	1.51	.60	1.50	.65	1.51	3.00	7.50	3.00	6.98
23.....	.75	1.50	.87	1.50	.50	1.00	.58	1.00	4.50	9.00	4.50	7.76
24.....	.67	1.48	.60	1.50	.45	1.00	.40	1.00	2.40	5.34	2.40	6.00
25.....	.80	2.00	.76	2.00	.20	.50	.19	.50	3.90	9.75	3.90	10.27
26.....	.86	2.00	.90	2.00	.65	1.51	.68	1.51	3.42	7.95	3.42	7.60
27.....	.60	1.50	.60	1.50	.40	1.00	.40	1.00	2.70	6.75	2.70	6.75
28.....	.60	1.50	.60	1.50	.20	.50	.20	.50	3.60	9.00	3.60	9.00
29.....	.70	2.00	.70	2.00	.35	1.00	.35	1.00	3.18	9.09	3.18	9.09
30.....	.35	1.00	.38	1.00	.18	.52	.19	.50	3.60	10.27	3.60	9.47
31.....	.75	1.50	.63	1.50	.50	1.00	.42	1.00	4.50	9.00	4.50	10.72
32.....	.63	1.50	.60	1.50	.84	2.00	.80	2.00	1.80	4.29	1.80	4.50
33.....	1.00	2.00	.88	2.00	.50	1.00	.44	1.00	3.30	6.60	3.30	7.50
34.....	.70	2.00	.72	2.00	1.05	3.00	1.08	3.00	3.12	6.91	3.12	8.68
35.....	.80	2.00	.74	2.00	.60	1.50	.55	1.50	3.90	9.75	3.90	10.54
36.....	.52	1.47	.58	1.50	.52	1.47	.58	1.50	3.75	10.71	3.75	9.61
37.....	1.00	2.00	.84	2.00	.50	1.00	.42	1.00	3.96	7.92	3.96	9.44
38.....	.80	2.00	.94	2.00	.80	2.00	.94	2.00	3.60	9.00	3.60	7.66
39.....	.90	1.50	.68	1.52	.60	1.00	.45	1.00	5.70	9.50	5.70	12.66
40.....	.68	1.51	.63	1.50	.90	2.00	.84	2.00	3.24	7.20	3.24	7.71
Total 40 acres....	28.57	66.95	27.23	67.05	23.10	54.98	22.27	55.02	125.97	297.30	125.97	309.30
Average one acre.	.715	1.674	.681	1.676	.578	1.374	.657	1.375	3.149	7.432	3.149	7.732

OATS—TABLE VIII, continued.

Cost of production and value of products of 40 acres of oats.

OFFICE NO.	WEAR AND TEAR.				TAXES.				OTHER EXPENSES.			
	Cost per acre and bushel.				Cost per acre and bushel.				Costs per acre and bushel.			
	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years
	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.
1.....	.60	1.50	.60	1.11	.25	.62	.25	.46	.50	1.25	.50	.93
2.....	.60	1.50	.60	1.67	.25	.62	.25	.69	.50	1.25	.50	1.39
3.....	.25	.41	.25	.52	.25	.41	.25	.52	.50	.83	.50	1.05
4.....	.34	.87	.34	.92	.25	.64	.25	.67	.50	1.29	.50	1.35
5.....	.33	.70	.33	.83	.25	.53	.25	.62	.50	1.07	.50	1.26
6.....	.33	.64	.33	.74	.25	.48	.25	.56	.50	.97	.50	1.11
7.....	.23	.58	.23	.53	.25	.62	.25	.58	.50	1.25	.50	1.23
8.....	.30	.60	.30	.73	.25	.50	.25	.63	.50	1.00	.50	1.23
9.....	.17	.49	.17	.49	.25	.71	.25	.71	.50	1.43	.50	1.43
10.....	.15	.30	.15	.37	.25	.50	.25	.62	.50	1.00	.50	1.25
11.....	.33	.83	.33	.83	.25	.62	.25	.62	.50	1.25	.50	1.25
12.....	.40	1.00	.40	.83	.25	.62	.25	.52	.50	1.25	.50	1.04
13.....	.20	.54	.20	.55	.25	.67	.25	.69	.50	1.35	.50	1.39
14.....	.50	1.25	.50	1.38	.30	.75	.30	.84	.50	1.25	.50	1.39
15.....	.58	1.45	.58	1.38	.30	.75	.30	.72	.50	1.25	.50	1.19
16.....	.47	1.23	.47	1.17	.25	.66	.25	.62	.50	1.33	.50	1.25
17.....	.25	.69	.25	.83	.25	.69	.25	.83	.50	1.39	.50	1.67
18.....	.27	.78	.27	.84	.25	.71	.25	.78	.50	1.43	.50	1.57
19.....	.60	1.20	.60	1.62	.25	.50	.25	.67	.50	1.00	.50	1.25
20.....	.22	.44	.22	.49	.25	.50	.25	.55	.50	1.00	.50	1.11
21.....	.33	.83	.33	.87	.25	.62	.25	.65	.50	1.25	.50	1.31
22.....	.23	.58	.23	.53	.25	.62	.25	.58	.50	1.25	.50	1.17
23.....	.50	1.00	.50	.86	.25	.50	.25	.43	.50	1.00	.50	.86
24.....	.38	.84	.38	.95	.25	.56	.25	.63	.50	1.11	.50	1.25
25.....	.40	1.00	.40	1.05	.25	.62	.25	.65	.50	1.25	.50	1.32
26.....	.27	.63	.27	.60	.25	.58	.25	.56	.50	1.17	.50	1.11
27.....	.16	.40	.16	.40	.25	.63	.25	.63	.50	1.25	.50	1.25
28.....	.17	.43	.17	.43	.25	.63	.25	.63	.50	1.25	.50	1.25
29.....	.35	1.00	.35	1.00	.25	.71	.25	.71	.50	1.43	.50	1.43
30.....	.13	.37	.13	.34	.25	.72	.25	.66	.50	1.43	.50	1.33
31.....	.07	.14	.07	.17	.25	.50	.25	.59	.50	1.00	.50	1.18
32.....	.24	.57	.24	.60	.25	.59	.25	.62	.50	1.19	.50	1.25
33.....	.43	.86	.43	.98	.25	.50	.25	.57	.50	1.00	.50	1.14
34.....	.49	1.40	.49	1.36	.25	.71	.25	.69	.50	1.43	.50	1.38
35.....	.22	.55	.22	.59	.25	.63	.25	.68	.50	1.25	.50	1.35
36.....	.50	1.42	.50	1.28	.25	.71	.25	.64	.50	1.42	.50	1.28
37.....	.75	1.50	.75	1.78	.25	.50	.25	.59	.50	1.00	.50	1.19
38.....	1.00	2.50	1.00	2.13	.25	.62	.25	.53	.50	1.25	.50	1.07
39.....	.80	1.33	.80	1.77	.25	.42	.25	.56	.50	.83	.50	1.11
40.....	.11	.24	.11	.26	.25	.56	.25	.59	.50	1.11	.50	1.19
Total 40 acres....	14.65	34.59	14.65	35.78	10.10	24.03	10.10	25.08	20.00	47.71	20.00	49.80
Average one acre.	.366	.865	.366	.894	.252	.601	.252	.621	.50	1.193	.50	1.245

OATS—TABLE VIII, continued.

Cost of production and value of products of 40 acres of oats.

OFFICE No.	TOTAL COST OF RAISING PRODUCTS.				VALUE OF STRAW.				VALUE OF GRAIN.			
	Total cost per acre and bushel.				Value per acre and bushel.				Value per acre and bushel.			
	Acres	Bush	Acres	Bush	Acres	Bush	Acres	Bush	Acres	Bush	Acres	Bush
	1896	1896	5 years	5 years	1896	1896	5 years	5 years	1896	1896	5 years	5 years
\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	\$	\$	\$	
1.....	12.13	30.33	12.93	23.94	5.76	14.40	5.76	10.66	6.40	.16	14.58	.27
2.....	12.22	30.55	12.51	24.75	4.68	11.70	4.68	13.00	5.60	.14	10.44	.29
3.....	11.72	19.53	11.77	24.52	5.00	8.33	5.00	10.41	9.60	.16	14.40	.30
4.....	9.63	24.69	9.75	26.35	4.80	12.31	4.80	18.97	7.02	.18	9.62	.26
5.....	11.14	23.70	11.09	27.72	4.50	9.57	4.50	11.25	8.46	.18	10.40	.26
6.....	10.24	19.69	10.16	22.57	5.70	10.96	5.70	12.66	9.36	.18	11.70	.26
7.....	11.49	28.72	11.86	27.58	5.20	13.00	5.20	12.09	7.20	.18	11.61	.27
8.....	11.84	23.68	11.90	29.02	4.76	9.50	4.75	11.58	9.00	.18	10.66	.26
9.....	9.56	27.31	9.72	27.77	4.50	12.85	4.50	12.85	7.00	.20	9.80	.28
10.....	10.82	21.64	10.86	27.15	4.60	9.20	4.60	11.50	8.50	.17	10.00	.25
11.....	10.94	27.35	11.11	27.77	5.00	12.50	5.00	12.50	7.20	.18	10.00	.25
12.....	11.60	29.00	12.26	25.54	6.00	15.00	6.00	12.50	10.40	.26	17.76	.37
13.....	13.35	23.68	13.64	37.88	4.68	12.65	4.68	13.06	5.55	.15	9.36	.26
14.....	12.61	31.52	12.85	35.69	4.14	10.35	4.14	11.50	6.00	.15	9.72	.27
.....	12.26	30.65	12.68	30.18	5.22	13.05	5.22	12.44	6.00	.15	11.34	.27
16.....	11.86	31.21	12:19	30.47	4.00	10.52	4.00	10.00	6.84	.18	10.80	.27
17.....	8.92	24.77	8.93	29.76	3.50	9.72	3.50	16.66	5.76	.16	8.10	.27
18.....	8.38	23.94	8.44	26.37	3.50	10.00	3.50	10.93	6.30	.18	8.32	.26
19.....	12.65	25.30	12.48	33.73	4.60	9.20	4.60	12.43	8.50	.17	9.99	.27
20.....	8.93	17.86	9.10	20.22	5.40	10.80	5.40	12.00	8.00	.16	12.60	.28
21.....	11.03	27.57	11.03	29.02	4.32	10.80	4.32	11.36	6.40	.16	9.88	.26
22.....	11.16	27.90	11.62	27.02	5.10	12.75	5.10	11.86	6.40	.16	12.04	.28
23.....	13.34	26.68	13.84	23.86	6.00	12.00	6.00	10.34	8.50	.17	15.66	.27
24.....	10.03	22.28	10.27	25.68	4.76	10.57	4.76	11.90	7.20	.16	11.20	.28
25.....	11.07	27.67	11.32	29.79	5.30	13.25	5.30	13.94	6.40	.16	10.64	.28
26.....	11.50	26.74	11.51	25.57	5.40	12.55	5.40	12.00	7.74	.18	11.70	.26
27.....	10.38	25.95	10.65	26.62	5.22	13.05	5.22	13.05	7.20	.18	11.60	.29
28.....	11.30	28.25	11.53	28.83	5.04	12.60	5.04	12.60	7.20	.18	10.80	.27
29.....	10.47	29.91	10.69	30.54	4.14	11.82	4.14	11.82	5.60	.16	9.45	.27
30.....	9.99	28.54	10.28	27.05	3.99	11.31	3.96	10.42	6.30	.18	10.64	.28
31.....	11.61	23.22	11.38	27.09	4.68	9.36	4.68	11.14	8.50	.17	11.34	.27
32.....	10.51	25.02	10.38	25.95	4.68	11.14	4.68	11.70	7.56	.18	10.40	.26
33.....	11.95	23.90	11.99	27.25	5.40	10.80	5.40	12.27	8.50	.17	11.44	.26
34.....	11.32	32.34	11.38	31.60	4.15	11.85	4.15	11.53	4.95	.15	9.36	.26
35.....	11.72	29.30	11.91	32.19	4.58	11.45	4.58	12.38	7.20	.18	10.36	.28
36.....	10.62	30.34	10.99	28.18	4.20	12.00	4.20	10.77	6.30	.18	10.92	.28
37.....	12.59	25.18	12.65	30.12	5.40	10.80	5.40	12.85	8.00	.16	10.92	.26
38.....	12.72	31.80	13.25	28.18	5.04	12.60	5.04	10.72	7.20	.18	13.16	.28
39.....	14.18	23.63	14.11	31.35	5.40	9.00	5.40	12.00	9.00	.15	12.15	.27
40.....	10.43	23.17	10.77	25.64	5.06	11.24	5.06	12.04	6.75	.15	11.34	.27
Total 40 acres....	450.21	1066.9	457.78	1130.5	193.39	456.65	193.36	485.62	291.59	6.83	446.20	10.90
Average one acre.	11.255	26.673	11.444	28.263	4.835	11.44	4.834	12.140	7.289	.1707	11.155	.272

COST OF PRODUCTION.

OATS—TABLE VIII, continued.

Cost of production and value of products of 40 acres of oats.

OFFICE NO.	TOTAL VALUE OF PRODUCT RAISED.				PROFIT.				LOSS.			
	Total value per acre and bushel.				Profit per acre and bushel.				Loss per acre and bushel.			
	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years
	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.
1.....	12.16	30.40	20.34	37.66	.08	0.07	7.41	13.72				
2.....	10.28	25.70	15.12	42.00			2.61	7.25	1.94	4.85		
3.....	14.60	24.33	19.40	40.41	2.88	4.80	7.63	15.89				
4.....	11.82	30.31	14.42	44.97	2.19	5.62	4.67	18.62				
5.....	12.96	27.57	14.90	37.25	1.82	3.87	3.81	9.53				
6.....	15.06	28.96	17.40	38.66	4.82	9.27	7.94	16.09				
7.....	12.40	31.00	16.81	39.09	.91	2.28	4.95	11.51				
8.....	13.75	27.50	15.41	37.58	1.91	3.82	3.51	8.56				
9.....	11.50	32.85	14.30	40.85	1.94	5.54	4.58	13.08				
10.....	13.10	26.20	14.60	36.50	2.28	4.56	3.74	9.35				
11.....	12.20	30.50	15.00	37.50	1.26	3.15	3.89	9.73				
12.....	16.40	41.00	23.76	49.50	4.80	12.00	11.50	23.96				
13.....	10.23	27.65	14.04	39.00			.40	1.12	3.12	8.43		
14.....	10.14	25.35	13.86	38.50			1.01	2.81	2.47	6.15		
15.....	11.22	28.05	16.66	39.44			3.88	9.26	1.04	2.60		
16.....	10.84	28.52	14.80	37.00			2.61	6.53	1.02	2.69		
17.....	9.26	25.72	11.60	43.66	.34	.95	2.67	13.90				
18.....	9.80	28.00	11.82	36.93	1.42	4.05	3.38	10.56				
19.....	13.10	26.20	14.59	39.43	.45	.90	2.11	5.70				
20.....	13.40	26.80	18.00	40.00	4.47	8.94	8.90	19.78				
21.....	10.72	26.80	14.20	37.36			3.17	8.34	.31	.77		
22.....	11.60	28.75	17.14	39.86	.34	.85	5.52	12.84				
23.....	14.50	29.00	21.66	37.34	1.16	2.32	7.82	13.48				
24.....	11.96	26.57	15.96	39.90	1.93	4.29	5.69	14.22				
25.....	11.70	29.25	15.94	41.94	.63	1.58	4.62	12.15				
26.....	13.14	30.55	17.10	38.00	1.64	3.81	5.59	12.43				
27.....	12.42	31.05	16.32	42.05	2.04	5.10	6.17	15.43				
28.....	12.24	30.60	15.84	39.60	.94	2.35	4.31	10.77				
29.....	9.74	27.82	13.59	38.82			2.90	8.28	.73	2.09		
30.....	10.28	29.31	14.60	38.42	.30	.77	4.32	11.37				
31.....	13.18	26.36	16.02	38.14	1.57	3.14	4.64	11.05				
32.....	12.24	29.14	15.08	37.70	1.73	4.12	4.70	11.75				
33.....	13.90	27.60	16.84	38.27	1.95	3.90	4.85	11.02				
34.....	9.10	26.85	13.51	37.53			2.13	5.93	2.22	5.49		
35.....	11.78	29.45	14.94	40.38	.06	.15	3.03	8.19				
36.....	10.50	30.00	15.12	38.77			4.13	10.59	.12	.34		
37.....	13.40	26.80	16.32	38.85	.81	1.62	3.67	8.73				
38.....	12.24	30.60	18.20	38.72			4.95	10.54	.48	1.20		
39.....	14.40	24.00	17.55	39.00	.22	.37	5.69	7.65				
40.....	11.81	26.24	16.40	39.04	1.38	3.07	5.63	13.40				
Total 40 acres....	484.96	1139.5	639.56	1575.6	48.22	107.27	181.78	445.11	18.45	34.63		
Average one acre.	12.124	28.488	15.990	39.39	1.205	2.682	4.545	11.128	.336	.866		

TABLE IX.—SUMMARY OF TABLE 8.

In the tables on this page has been summarized the results in the foregoing table. The tables show the total cost of producing 40 acres of oats and the average cost per acre and bushel, the total value of products of 40 acres and the average value per acre and bushel. In the analysis of expenses wages was allowed for team work as well as for labor.

(For a more complete analysis of expenses in this case, both when wages is allowed for team work and when horses or their value is treated as capital, see the next two pages.)

Cost of production.

Items.	40 acres	One	Bush.	40 acres	One	Bush.
	1896.	acre.		5 years.	acre.	
	\$	\$	Cts.	\$	\$	Cts.
Plowing.....	45 13	1.128	2.68	45 13	1.128	2.80
Harrowing and seeding.....	26 45	.661	1.58	26 45	.661	1.64
Cutting.....	10 68	.267	.64	10 68	.267	.66
Fertilizing.....	98 70	2.468	5.85	98 70	2.467	6.11
Seed.....	17 81	.445	1.06	27 55	.688	1.70
Shocking and stacking.....	29 05	.726	1.72	29 05	.726	1.80
Threshing.....	28 57	.715	1.68	27 23	.681	1.68
Marketing.....	23 10	.578	1.37	22 27	.558	1.37
Interest.....	125 97	3.149	7.43	125 97	3.149	7.74
Wear and tear.....	14 65	.366	.87	14 65	.366	.90
Taxes.....	10 10	.252	.60	10 10	.252	.62
Other expenses.....	20 00	.500	1.19	20 00	.500	1.24
	\$450 21	11.255	26.67	\$457 78	11.444	28.26

Value of products.

Value of grain.....	\$291 59	7.289	17.07	\$146 20	11.155	27.25
Value of straw.....	193 39	4.835	11.41	193 36	4.835	12.14
Total value.....	\$484 98	12.124	28.48	\$639 56	15.990	39.39

Profit and loss.

Profit.....	\$48 22	1.205	26.82	\$181 78	4.545	11.13
Loss.....	13 45	.336	8.66	.....	.....	.....
Balance profit.....	\$34 77	.869	18.16	\$181 78	4.545	11.13

TABLE X.—COST OF PRODUCTION AND VALUE OF 40 ACRES OF OATS.

The data upon which the calculations in the tables on this page are based may also be found in tables 1, 2, 3. "Cost of Production" is shown in table 1. "Value of Products" is shown in table 2. Table 3 shows the surplus value or cost, as the case may be. In table 4 is presented the "Annual Investment" and the respective amounts of interest and necessary profit at 12 per cent. on same and upon the value of the machinery used, and also the "Surplus Value" above the sum of these expenses. It should be noticed that in this presentation wages has been allowed for team work in place of treating horses, or their value, as other capital.

1. *Cost of production.*

Items.	40 acres.	One acre.	One bush.
	\$	\$	Cts.
1 Plowing	185 hours at 23.5 cents	43.48	1,087
2 Harrowing, etc.	72 hours at 23.5 cents	16.92	.423
3 Seeding	40 hours at 23.5 cents	9.40	.235
4 Cutting	41 hours at 23.5 cents	9.64	.241
5 Shocking	55 hours at 12.2 cents	6.71	.168
6 Stacking, man and team.....	61 hours at 23.5 cents	14.34	.358
7 Stacking, extra help	61 hours at 12.2 cents	7.44	.186
8 Threshing, labor	112 hours at 12.2 cents	13.66	.341
9 Threshing machine	1634 bush. at .5 cents	8.17	.204
10 Marketing	85 hours at 23.5 cents	22.43	.561
11 Seed	104 bush. at 35 cents	36.40	.910
12 Taxes	40 acres at 25.3 cents	10.12	.253
13 Fertilizing clover and	86 loads manure	45.00	1.125
14 Other expenses	40 acres at 50 cents	20.00	.500
15 Depreciation machinery ..	146.80 dollars at 10 per cent.	14.68	.367
Annual investment		278.39	6.959
16 Interest, machinery	146.80 dollars at 6 per cent.	8.81	.220
17 Interest, an. investment..	278.39 dollars at 6 per cent.	16.70	.418
18 Interest, land	1,780.00 dollars at 6 per cent.	106.80	2.670
Total		410.70	10.267

Total investment, \$2,205.19. Average investment per acre, \$55.13. Team work, 49.5 days; labor, 72.3 days. Value per acre land, \$44.50.

2. *Value of products.*

1 1634 bushels of oats at 27.30 cents.....	446.08	11.152	27.30
2 40 acres of straw at \$2.25.....	90.00	2.250	5.51
Total	536.08	13.402	32.81

3. *Surplus value.*

1 Surplus value—profits	125.38	3.135	7.68
-------------------------------	--------	-------	------

Equivalent to 5.68 per cent. on capital invested.

Annual investment, interest and necessary profit at 12 per cent. on same and upon the value of machinery used; also the surplus value of products above the sum of these expenses. This surplus capitalized at 12 per cent. and credited to the land gives the value of the land for raising oats.

Annual investment	278.39	6.959	17.03
Machinery	\$146.80 at 12 per cent.	17.62	.440
Annual investment	\$278.39 at 12 per cent.	33.40	.835
Total expenses less rent.....	329.41	8.234	20.16
Surplus credited to land.....	*206.67	5.168	12.65
Total	536.08	13.402	32.81

* Capitalized at 12 per cent. equivalent to \$1,722.25 or \$43.06 per acre. This is \$1.45 per acre below the value reported by the farmers.

TABLE XI.—COST OF PRODUCTION AND VALUE OF 40 ACRES OF OATS.

The data upon which the calculations in the table on this page are based may also be found in tables 1, 2, 3. "Cost of Production" is shown in table 1. "Value of Product" is shown in table 2. Table 3 shows the "Surplus Value" above cost. In table 4 is shown the "Annual Investment" and the respective amounts of interest and necessary profit at 12 per cent. on same and upon the value of the machinery and horses used, also the surplus value of these expenses. In this presentation horses, or their value, have been treated as other capital.

1. Cost of production.

Items.		40 acres.	One acre.	One bush.
		\$	\$	Cts.
1	Plowing 185 hours at 12.2 cents	22.57	.564	1.38
2	Harrowing, etc. 72 hours at 12.2 cents	8.78	.219	.54
3	Seeding 40 hours at 12.2 cents	4.88	.122	.30
4	Cutting 41 hours at 12.2 cents	5.00	.125	.31
5	Shocking 55 hours at 12.2 cents	6.71	.168	.41
6	Stacking 122 hours at 12.2 cents	14.88	.372	.91
7	Threshing, labor 112 hours at 12.2 cents	13.66	.342	.83
8	Threshing, machine 1634 bush. at .5 cent	8.17	.204	.50
9	Marketing 95 hours at 12.2 cents	11.59	.290	.71
10	Seed 104 bush. at 35 cents	36.40	.910	2.23
11	Taxes 40 acres at 25.3 cents	10.12	.253	.62
12	Maintenance of horses 40 acres at 80 cents	32.00	.800	1.96
13	Fertilizing, clover and..... 86 loads manure	45.00	1.125	2.75
14	Other expenses 40 acres at 50 cents	20.00	.500	1.22
15	Depreciation machinery .146.80 dollars at 10 per cent.	14.68	.367	.90
16	Depreciation horses 52.80 dollars at 10 per cent.	5.28	.132	.32
	Annual investment	259.72	6.493	15.89
17	Interest, machinery 146.80 dollars at 6 per cent.	8.81	.220	.54
18	Interest, horses 52.80 dollars at 6 per cent.	3.17	.079	.20
19	Interest, an. investment. 259.72 dollars at 6 per cent.	15.58	.390	.95
20	Interest, land. 1,780.00 dollars at 6 per cent.	106.80	2.670	6.54
	Total	394.08	9.852	24.12

Total investment, \$2,239.32. Average investment per acre, \$55.98. Team work, 49.5 days. Labor, 72.3 days. Value per acre of land, \$44.50.

2. Value of products.

1	1634 bushels of oats at 27.3 cents.....	446.08	11.152	27.30
2	40 acres of straw at \$2.25.....	90.00	2.250	5.51
	Total	536.08	13.402	32.81

3. Surplus value.

Surplus value—profit	142.00	3.550	8.69
----------------------------	--------	-------	------

Equivalent to 6.34 per cent. on capital invested.

Annual investment, interest and necessary profit at 12 per cent. on the same and upon the value of machinery and horses used; also the surplus value of products above the sum of these expenses. (This surplus capitalized at 12 per cent. and credited to the land gives the value of the land for raising oats.)

Annual investment	259.72	6.493	15.89
Machinery \$146.80 at 12 per cent.	259.72	6.493	15.89
Horses 52.80 at 12 per cent.	6.34	.159	.40
Annual investment 259.72 at 12 per cent.	31.16	.779	1.90
Total expenses less rent.....	314.84	7.871	19.27
Surplus credited to land.....	*221.24	5.531	13.54
Total	536.08	13.402	32.81

*Capitalized at 12 per cent. equivalent to \$1,843.66 or \$46.09 per acre. This is \$1.59 above the value placed upon it by the farmers.

In relation to the cost of producing 40 acres of oats as presented in the four preceding tables it is, perhaps, proper to repeat here a few facts to which attention has already been called.

In table VIII, covering six pages, the cost per each acre in detail, the total cost of 40 acres and the average cost per acre are presented. Table IX is made up of the totals of table VIII. Table X is a more complete analysis of table IX including besides the expenses of that table, interest on the value of the machinery used and upon the sum of the annual investments. These items of expenses were added because they are unavoidable in farming and constitute a proper charge against the products.

It should be noticed that in these three tables the expenses in farming arising from the use of horses for motor power was arrived at by allowing wages, at ruling rates in the respective localities, for team work. It appeared, however, that this is not the proper way in which to treat expenses of this nature. Work horses are usually regarded as capital invested. This being the case, expenses from this source are with a few exceptions similar to the expenses of other capital used and should, therefore, be treated accordingly. Another analysis of the cost of production was therefore made, in which the expenses arising from the horses used were treated from this point of view. This analysis is presented in table XI and includes in the expenses, wages for man's labor only, while for horses, depreciation and interest on their value and actual yearly cost, per acre, of their maintenance was allowed as expense. This method of treating expenses of this kind does not greatly affect the total cost, but is undoubtedly proper, at least in most cases.

The average cost of growing one acre of wheat as computed from table XI is shown below:

Items.	One acre.	One bush
		Cts.
Plowing	\$.564	1.38
Harrowing, etc .....	.219	.54
Seeding .....	.122	.30
Cutting .....	.125	.31
Shocking .....	.168	.41
Stacking .....	.372	.91
Threshing—labor .....	.342	.83
Threshing—machine .....	.204	.50
Marketing .....	.290	.71
Seed .....	.910	2.23
Taxes .....	.253	.62
Maintenance horses .....	.800	1.96
Fertilizing	1.125	2.75
Other expenses .....	.500	1.22
Depreciation machinery .....	.367	.90
Depreciation horses .....	.132	.32
Annual investment	\$6.493	15.89
Interest machinery .....	.220	.54
Interest horses .....	.079	.20
Interest An. invest. ....	.390	.95
Interest land	2.670	6.54
Total	\$9.852	24.12

RYE—TABLE XII.

Cost of production and value of products of 40 acres of rye.

OFFICE NO.	PLOWING.				HARROWING AND SEEDING.				CUTTING.			
	Cost per acre and bushel.				Cost per acre and bushel.				Cost per acre and bushel.			
	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years
	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.
1.....	1.00	4.54	1.00	5.55	.65	2.96	.65	3.61	.25	1.14	.25	1.39
2.....	1.40	7.00	1.40	7.00	.90	4.50	.90	4.50	.30	1.50	.30	1.50
3.....	1.00	5.00	1.00	4.34	.55	2.75	.55	2.39	.30	1.50	.30	1.30
4.....	.85	3.86	.85	4.25	.65	2.96	.65	3.25	.25	1.14	.25	1.25
5.....	1.00	5.88	1.00	5.26	.50	2.94	.50	2.64	.25	1.47	.25	1.32
6.....	.80	2.85	.80	4.00	.45	1.60	.45	2.25	.18	.64	.18	.90
7.....	1.00	4.35	1.00	5.00	.77	3.34	.77	3.85	.20	.87	.20	1.00
8.....	1.00	4.00	1.00	4.55	.50	2.00	.50	2.27	.25	1.00	.25	1.14
9.....	.75	4.17	.75	4.42	.63	3.50	.63	3.58	.25	1.39	.25	1.47
10.....	1.60	6.40	1.60	7.27	.90	3.60	.90	4.10	.30	1.20	.30	1.36
11.....	1.35	4.50	1.35	5.40	.68	2.27	.68	2.72	.27	.90	.27	1.08
12.....	1.00	4.16	1.00	4.34	.65	2.71	.65	2.83	.15	.63	.15	.65
13.....	1.50	8.34	1.50	8.34	.72	4.00	.72	4.00	.30	1.67	.30	1.67
14.....	1.16	3.86	1.16	4.64	1.06	3.53	1.06	4.24	.45	1.50	.45	1.80
15.....	1.00	5.55	1.00	5.88	.50	2.77	.50	2.94	.20	1.11	.20	1.13
16.....	2.00	14.29	2.00	11.76	1.08	7.72	1.08	6.35	.45	3.22	.45	2.65
17.....	1.00	6.25	1.00	6.66	.55	3.43	.55	3.68	.20	1.25	.20	1.34
18.....	1.00	10.00	1.00	7.13	.40	4.00	.40	2.86	.20	2.00	.20	1.43
19.....	1.25	5.00	1.25	5.20	.75	3.00	.75	3.12	.27	1.08	.27	1.13
20.....	1.00	3.33	1.00	4.00	.70	2.33	.70	2.80	.30	1.00	.30	1.20
21.....	1.20	6.67	1.20	6.00	.55	3.06	.55	2.75	.30	1.67	.30	1.50
22.....	1.24	6.20	1.24	6.20	.64	3.20	.64	3.20	.27	1.35	.27	1.35
23.....	1.37	6.85	1.37	6.85	.82	4.10	.82	4.10	.37	1.85	.37	1.85
24.....	1.20	4.00	1.20	4.28	.98	3.27	.98	3.50	.35	.83	.35	.89
25.....	1.00	4.54	1.00	5.00	.57	2.60	.57	2.85	.20	.91	.20	1.00
26.....	1.00	5.00	1.00	5.00	.50	2.50	.50	2.50	.20	1.00	.20	1.00
27.....	1.13	5.65	1.13	6.28	.50	2.50	.50	2.78	.23	1.15	.23	1.28
28.....	1.00	5.00	1.00	5.00	.70	3.50	.70	3.50	.25	1.25	.25	1.25
29.....	1.00	6.66	1.00	6.66	.65	4.35	.65	4.35	.42	2.80	.42	2.80
30.....	1.00	6.67	1.00	5.89	.63	4.20	.63	3.70	.30	2.00	.30	1.76
31.....	1.25	5.68	1.25	5.68	.63	2.87	.63	2.87	.30	1.36	.30	1.36
32.....	1.00	6.25	1.00	6.25	.60	3.75	.60	3.75	.25	1.56	.25	1.56
33.....	1.50	8.82	1.50	8.33	.60	3.52	.60	3.34	.30	1.76	.30	1.67
34.....	1.25	6.25	1.25	6.94	.59	2.95	.59	3.28	.25	1.25	.25	1.38
35.....	1.00	3.57	1.00	3.70	.60	2.15	.60	2.22	.20	.72	.20	.74
36.....	.84	3.82	.84	2.15	.66	3.00	.66	1.72	.30	1.36	.30	.76
37.....	1.13	6.28	1.13	6.64	.53	2.95	.53	3.12	.25	1.39	.25	1.47
38.....	1.25	6.25	1.25	6.25	1.07	5.35	1.07	5.35	.25	1.25	.25	1.25
39.....	1.25	5.21	1.25	5.43	.55	2.29	.55	2.38	.25	1.04	.25	1.08
40.....	.86	4.30	.86	3.91	.52	2.60	.52	2.36	.23	1.15	.23	1.04
Total 40 acres....	45.03	227.00	45.13	227.43	26.48	130.62	26.48	131.60	10.69	53.86	10.69	53.75
Average one acre.	1.126	5.67	1.126	5.69	66.2	3.26	66.2	3.29	.267	1.346	.267	1.344

COST OF PRODUCTION.

RYE—TABLE XII, continued.

Cost of production and value of products of 40 acres of rye.

OFFICE NO.	FERTILIZING.				SEED.				SHOCKING AND STACKING.			
	Cost per acre and bushel.				Cost per acre and bushel.				Cost per acre and bushel.			
	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years
	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.
1.....	1.50	6.81	1.50	8.33	.59	2.68	.84	4.66	.68	3.09	.68	3.77
2.....	1.60	8.00	1.60	8.00	.49	2.45	.68	3.40	1.20	6.00	1.20	6.00
3.....	1.50	7.50	1.50	6.52	.50	2.50	.72	8.13	.83	4.15	.83	3.61
4.....	1.50	6.82	1.50	7.50	.52	2.36	.72	3.60	.50	2.27	.50	2.50
5.....	1.50	8.83	1.50	7.89	.54	3.17	.70	3.67	.84	4.94	.84	4.42
6.....	1.50	5.36	1.50	7.50	.52	1.86	.70	3.50	.70	2.50	.70	3.50
7.....	1.50	6.52	1.50	7.50	.51	2.22	.70	3.50	.60	2.61	.60	3.00
8.....	1.50	6.00	1.50	6.82	.52	2.08	.72	3.28	.90	3.60	.90	4.09
9.....	1.50	8.34	1.50	8.88	.35	1.94	.50	2.24	.54	3.00	.54	3.17
10.....	1.50	6.00	1.50	6.82	.68	2.72	.92	4.18	.81	3.24	.81	3.68
11.....	1.50	5.00	1.50	6.00	.52	1.76	.69	2.76	.81	2.70	.81	3.24
12.....	1.50	6.25	1.60	6.51	.51	2.12	.68	2.55	.95	3.95	.95	4.14
13.....	1.50	8.34	1.50	8.84	.72	4.00	.98	5.45	.95	5.27	.95	6.27
14.....	1.50	5.00	1.50	6.00	.49	1.63	.71	2.84	.55	1.84	.55	2.20
15.....	2.00	11.11	2.00	11.76	.68	3.78	.92	5.42	.75	4.17	.75	4.42
16.....	1.50	10.72	1.50	8.83	.48	3.42	.68	4.00	.73	5.22	.73	4.29
17.....	1.50	9.37	1.50	10.00	.43	2.69	.60	4.00	.59	3.69	.59	3.94
18.....	1.50	15.00	1.50	10.72	.45	4.50	.68	4.86	.48	4.80	.48	3.43
19.....	1.50	6.00	1.50	6.25	.50	2.00	.60	2.50	.45	1.80	.45	1.88
20.....	1.50	5.00	1.50	6.00	.52	1.73	.72	2.88	.84	2.80	.84	3.36
21.....	2.00	11.11	2.00	10.00	.52	2.89	.84	4.20	.65	3.61	.65	3.25
22.....	1.25	6.25	1.25	6.25	.57	2.85	.82	4.10	.55	2.75	.55	2.75
23.....	1.60	8.00	1.60	8.00	.68	8.40	.88	4.40	.47	2.35	.47	2.35
24.....	1.45	4.83	1.45	5.18	.51	1.70	.75	2.68	.87	2.90	.87	3.11
25.....	1.50	6.82	1.50	7.50	.59	2.69	.84	4.20	.85	3.86	.85	4.25
26.....	1.50	7.50	1.50	7.50	.54	2.70	.69	3.45	.90	4.50	.90	4.50
27.....	1.60	8.00	1.60	8.88	.61	3.05	.84	4.66	.86	4.30	.86	4.78
28.....	1.30	6.50	1.30	6.50	.62	3.10	.86	4.30	.78	3.90	.78	3.90
29.....	1.50	10.00	1.50	10.00	.93	6.20	1.32	8.80	1.00	6.66	1.00	6.66
30.....	1.50	10.00	1.50	8.82	.72	4.80	.92	5.41	.60	4.00	.60	3.53
31.....	1.75	7.96	1.75	7.96	.60	2.73	.84	3.81	.78	3.54	.78	3.54
32.....	1.50	9.37	1.50	9.37	.62	3.87	.84	5.25	.35	2.19	.35	2.19
33.....	1.50	8.82	1.50	8.33	.61	3.59	.82	4.55	.64	3.77	.64	3.65
34.....	1.50	7.50	1.50	8.34	.60	3.00	.84	4.66	.70	3.50	.70	3.89
35.....	1.50	5.36	1.50	6.55	.60	2.14	.84	3.11	.86	3.07	.86	3.18
36.....	1.75	7.95	1.75	4.50	.60	2.73	.84	2.15	.58	2.64	.58	1.48
37.....	1.75	9.72	1.75	10.29	.43	2.39	.60	3.53	.75	4.16	.75	4.41
38.....	1.50	7.50	1.50	7.50	.61	3.05	.84	4.20	.75	3.75	.75	3.75
39.....	1.60	6.67	1.60	6.96	.62	2.58	.84	3.66	1.00	4.17	1.00	4.35
40.....	2.00	10.00	2.00	9.09	.51	2.55	.72	3.28	.42	2.10	.42	1.91
Total 40 acres....	62.15	311.83	62.15	312.69	22.61	113.59	31.24	157.92	29.06	143.36	29.06	145.24
Average one acre.	1.554	7.706	1.554	7.82	.565	2.84	.781	3.95	.726	3.584	.726	3.631

RYE—TABLE XII, continued.

Cost of production and value of products of 40 acres of rye.

OFFICE NO.	THRESHING.				MARKETING.				INTEREST.			
	Cost per acre and bushel.				Cost per acre and bushel.				Cost per acre and bushel.			
	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years
\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	
1.....	.66	3.00	.54	3.00	.22	1.00	.18	1.00	3.60	16.36	3.60	20.00
2.....	.60	3.00	.60	3.00	.15	.75	.15	.75	3.72	18.60	3.72	18.60
3.....	.60	3.00	.69	3.00	.30	1.50	.35	1.52	3.84	19.20	3.84	16.69
4.....	.88	4.00	.80	4.00	.66	3.00	.60	3.00	1.80	8.18	1.80	9.00
5.....	.51	3.00	.57	3.00	.34	2.00	.38	2.00	2.70	15.88	2.70	14.21
6.....	.84	3.00	.60	3.00	1.40	5.00	1.00	5.00	1.50	5.36	1.50	7.50
7.....	.46	2.00	.40	2.00	.69	3.00	.60	3.00	3.00	13.05	3.00	15.00
8.....	.75	3.00	.66	3.00	.25	1.00	.22	1.00	3.60	14.40	3.60	16.36
9.....	.36	2.00	.34	2.00	.90	5.00	.85	5.00	1.50	8.34	1.50	8.88
10.....	.50	2.00	.44	2.00	.50	2.00	.44	2.00	1.80	7.20	1.80	8.18
11.....	.90	3.00	.75	3.00	1.20	4.00	1.00	4.00	2.40	8.00	2.40	9.60
12.....	.48	2.00	.46	2.00	.60	2.50	.58	2.52	3.00	12.50	3.00	13.05
13.....	.54	3.00	.54	3.00	.54	3.00	.54	3.00	4.80	26.67	4.80	26.67
14.....	.90	3.00	.75	3.00	.60	2.00	.50	2.00	4.20	14.00	4.20	16.80
15.....	.54	3.00	.51	3.00	.64	3.00	.51	3.00	4.38	24.34	4.38	25.76
16.....	.42	3.00	.51	3.00	.28	2.00	.34	2.00	2.70	19.28	2.70	15.88
17.....	.40	2.50	.38	2.53	.48	3.00	.45	3.00	1.50	9.37	1.50	10.00
18.....	.30	3.00	.42	3.00	.20	2.00	.28	2.00	1.20	13.00	1.20	8.57
19.....	.75	3.00	.72	3.00	.75	3.00	.72	3.00	3.48	13.92	3.48	14.50
20.....	.60	2.00	.50	2.00	.45	1.50	.38	1.52	1.08	3.60	1.08	4.32
21.....	.54	3.00	.60	3.00	.27	1.50	.30	1.50	3.00	16.67	3.00	15.00
22.....	.60	3.00	.60	3.00	.40	2.00	.40	2.00	3.00	15.00	3.00	15.00
23.....	.40	2.00	.40	2.00	.40	2.00	.40	2.00	4.50	22.50	4.50	22.50
24.....	.90	3.00	.84	3.00	.60	2.00	.56	2.00	2.40	8.00	2.40	8.57
25.....	.66	3.00	.60	3.00	.22	1.00	.20	1.00	3.90	17.73	3.90	19.50
26.....	.60	3.00	.60	3.00	.40	2.00	.40	2.00	3.42	17.10	3.42	17.10
27.....	.30	1.50	.27	1.50	.40	2.00	.36	2.00	2.70	13.50	2.70	15.00
28.....	.40	2.00	.40	2.00	.20	1.00	.20	1.00	3.60	18.00	3.60	18.00
29.....	.45	3.00	.45	3.00	.39	2.00	.30	2.00	3.18	21.20	3.18	21.20
30.....	.15	1.00	.17	1.00	.15	1.00	.17	1.00	3.60	24.00	3.60	21.18
31.....	.44	2.00	.44	2.00	.44	2.00	.44	2.00	4.50	20.45	4.50	20.45
32.....	.48	3.00	.48	3.00	.40	2.50	.40	2.50	1.80	11.25	1.80	11.25
33.....	.34	2.00	.36	2.00	.26	1.53	.27	1.53	3.30	19.41	3.30	18.34
34.....	.40	2.00	.36	2.00	.60	3.00	.54	3.00	3.12	15.60	3.12	17.34
35.....	.84	3.00	.81	3.00	.84	3.00	.81	3.00	3.90	13.93	3.90	14.44
36.....	.66	3.00	1.17	3.00	.44	2.00	.78	2.00	3.75	17.04	3.75	9.61
37.....	.54	3.00	.51	3.00	.18	1.00	.17	1.00	3.96	22.00	3.96	23.29
38.....	.60	3.00	.60	3.00	.60	3.00	.60	3.00	3.60	18.00	3.60	18.00
39.....	.36	1.50	.35	1.53	.24	1.00	.23	1.00	5.70	23.75	5.70	24.78
40.....	.60	3.00	.66	3.00	.60	3.00	.66	3.00	3.24	16.20	3.24	14.73
Total 40 acres....	22.25	105.50	21.85	105.56	18.99	88.78	18.26	88.81	125.97	621.58	125.97	624.85
Average acres....	.556	2.64	.546	2.64	.475	2.22	.456	2.22	3.150	15.5	3.15	15.6

RYE—TABLE XII, continued.

Cost of production and value of products of 40 acres of rye.

OFFICE NO.	WEAR AND TEAR.				TAXES.				OTHER EXPENSES.			
	Cost per acre and bushel.				Cost per acre and bushel.				Cost per acre and bushel.			
	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years
	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.
1.....	.60	2.72	.60	3.33	.25	1.14	.25	1.39	.50	2.28	.50	2.79
2.....	.60	3.00	.60	3.00	.25	1.25	.25	1.25	.50	2.50	.50	2.50
3.....	.25	1.25	.25	1.09	.25	1.25	.25	1.09	.50	2.50	.50	2.19
4.....	.34	1.54	.34	1.70	.25	1.14	.25	1.25	.50	2.28	.50	2.60
5.....	.33	1.94	.33	1.74	.25	1.47	.25	1.32	.50	2.95	.50	2.64
6.....	.33	1.18	.33	1.65	.25	.89	.25	1.25	.50	1.79	.50	2.50
7.....	.23	1.00	.23	1.15	.25	1.08	.25	1.25	.50	2.17	.50	2.50
8.....	.30	1.20	.30	1.36	.25	1.00	.25	1.13	.50	2.00	.50	2.27
9.....	.17	.94	.17	1.00	.25	1.38	.25	1.47	.50	2.77	.50	2.95
10.....	.15	.60	.15	.69	.25	1.00	.25	1.13	.50	2.00	.50	2.27
11.....	.33	1.10	.33	1.32	.25	.83	.25	1.00	.50	1.67	.50	2.00
12.....	.40	1.67	.40	1.74	.25	1.04	.25	1.09	.50	2.09	.50	2.18
13.....	.20	1.11	.20	1.11	.25	1.38	.25	1.38	.50	2.77	.50	2.77
14.....	.50	1.67	.50	2.00	.30	1.00	.30	1.20	.50	1.67	.50	2.00
15.....	.58	3.23	.58	3.41	.30	1.67	.30	1.76	.50	2.77	.50	2.94
16.....	.47	3.35	.47	2.76	.25	1.78	.25	1.47	.50	3.57	.50	2.95
17.....	.25	1.56	.25	1.66	.25	1.56	.25	1.66	.50	3.13	.50	3.33
18.....	.27	1.70	.27	1.93	.25	2.50	.25	1.78	.50	5.00	.50	3.57
19.....	.60	2.40	.60	2.50	.25	1.00	.25	1.04	.50	2.00	.50	2.08
20.....	.22	.74	.22	.88	.25	.83	.25	1.00	.50	1.67	.50	2.00
21.....	.33	1.83	.33	1.65	.25	1.38	.25	1.25	.50	2.77	.50	2.50
22.....	.23	1.15	.23	1.15	.25	1.25	.25	1.25	.50	2.50	.50	2.50
23.....	.50	2.50	.50	2.50	.25	1.25	.25	1.25	.50	2.50	.50	2.50
24.....	.38	1.27	.38	1.36	.25	.83	.25	.89	.50	1.67	.50	1.79
25.....	.40	1.82	.40	2.00	.25	1.13	.25	1.25	.50	2.27	.50	2.50
26.....	.27	1.35	.27	1.35	.25	1.25	.25	1.25	.50	2.50	.50	2.50
27.....	.16	.80	.16	.89	.25	1.25	.25	1.39	.50	2.50	.50	2.78
28.....	.17	.85	.17	.85	.25	1.25	.25	1.25	.50	2.50	.50	2.50
29.....	.35	2.34	.35	2.34	.25	1.66	.25	1.66	.50	3.33	.50	3.33
30.....	.13	.87	.13	.76	.25	1.66	.25	1.47	.50	3.33	.50	2.95
31.....	.07	.32	.07	.32	.25	1.14	.25	1.14	.50	2.27	.50	2.27
32.....	.24	1.50	.24	1.50	.25	1.56	.25	1.56	.50	3.13	.50	3.13
33.....	.43	2.53	.43	2.39	.25	1.47	.25	1.39	.50	2.95	.50	2.77
34.....	.49	2.45	.49	2.72	.25	1.25	.25	1.39	.50	2.50	.50	2.78
35.....	.22	.79	.22	.81	.25	.88	.25	.93	.50	1.78	.50	1.87
36.....	.50	2.27	.50	1.28	.25	1.14	.25	.64	.50	2.27	.50	1.28
37.....	.75	4.16	.75	4.41	.25	1.39	.25	1.47	.50	2.78	.50	2.95
38.....	1.00	5.00	1.00	5.00	.25	1.25	.25	1.25	.50	2.50	.50	2.50
39.....	.80	3.33	.80	3.47	.25	1.04	.25	1.08	.50	2.08	.50	2.18
40.....	.12	.60	.12	.54	.25	1.25	.25	1.14	.50	2.50	.50	2.27
Total 40 acres....	14.66	72.63	14.66	73.31	10.10	50.47	10.10	50.81	20.00	100.21	20.00	100.78
Average one acre.	.366	1.816	.366	1.833	.252	1.262	.252	1.270	.50	2.505	.50	2.519

RYE—TABLE XII, continued.

Cost of production and value of products of 40 acres of rye.

OFFICE No.	TOTAL COST OF RAISING PRODUCTS.				VALUE OF STRAW.				VALUE OF GRAIN.			
	Total cost per acre and bushel.				Value per acre and bushel.				Value per acre and bushel.			
	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years
	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.
1.....	10.50	47.72	10.59	58.82	3.00	13.64	3.00	16.66	7.48	34.00	8.28	46.00
2.....	11.71	58.55	11.90	59.50	2.97	14.85	2.97	14.85	6.60	33.00	9.00	45.00
3.....	10.42	52.10	10.78	46.87	3.52	17.00	3.52	15.30	6.60	33.00	11.04	48.00
4.....	8.70	39.55	8.76	43.80	3.51	15.95	3.51	17.55	7.70	35.00	9.60	48.00
5.....	9.26	54.47	9.52	50.11	3.38	19.88	3.38	17.79	6.12	36.00	8.93	47.00
6.....	8.97	32.03	8.51	42.55	3.36	12.00	3.36	16.80	9.80	35.00	9.40	47.00
7.....	9.71	42.21	9.75	48.75	2.97	12.91	2.97	14.85	7.82	34.00	9.40	47.00
8.....	10.32	41.28	10.40	47.27	3.60	14.40	3.60	16.36	8.75	35.00	10.56	48.00
9.....	7.70	42.77	7.78	46.76	3.12	17.33	3.12	18.35	6.30	35.00	7.50	50.00
10.....	9.49	37.96	9.61	43.68	2.80	11.20	2.80	12.73	8.50	34.00	10.12	46.00
11.....	10.71	35.70	10.53	42.12	3.12	10.40	3.12	12.48	10.50	35.00	11.50	46.00
12.....	9.99	41.62	10.12	44.00	3.40	14.16	3.40	14.78	8.16	34.00	10.35	45.00
13.....	12.52	69.55	12.78	71.00	3.36	18.66	3.36	18.66	6.48	36.00	8.82	49.00
14.....	12.21	40.70	12.18	48.72	3.96	13.20	3.96	15.84	9.90	33.00	11.75	47.00
15.....	11.97	66.50	12.15	71.47	4.16	23.11	4.16	24.47	6.12	34.00	7.82	46.00
16.....	10.86	77.57	11.21	65.94	3.00	21.43	3.00	17.65	4.48	32.00	7.65	45.00
17.....	7.65	47.80	7.77	51.80	2.50	15.62	2.50	16.66	5.60	35.00	7.20	48.00
18.....	6.75	67.60	7.18	51.28	2.00	20.00	2.00	14.28	3.00	30.00	6.20	45.00
19.....	11.05	44.20	11.09	46.20	3.00	12.00	3.00	12.50	8.25	33.00	9.60	40.00
20.....	7.96	26.53	7.99	31.96	3.63	12.10	3.63	14.52	10.50	35.00	12.00	48.00
21.....	10.11	56.16	10.52	53.60	2.97	16.50	2.97	14.85	5.40	30.00	5.60	48.00
22.....	9.50	47.60	9.75	48.75	3.36	16.80	3.36	16.80	6.60	33.00	9.40	47.00
23.....	11.86	59.30	12.06	60.30	4.48	22.40	4.48	22.40	6.80	34.00	8.80	44.00
24.....	10.29	34.30	10.43	37.25	4.56	15.20	4.56	16.28	11.20	34.00	14.00	50.00
25.....	10.64	48.37	10.81	54.05	3.40	15.45	3.40	17.00	7.48	34.00	9.60	48.00
26.....	10.08	50.40	10.23	51.15	2.88	14.40	2.88	14.40	7.20	36.00	9.20	46.00
27.....	9.24	46.20	9.40	52.22	2.64	13.20	2.64	14.66	7.00	35.00	8.64	48.00
28.....	9.77	48.85	10.01	50.05	3.08	15.40	3.08	15.40	7.00	35.00	9.80	49.00
29.....	10.53	70.20	10.92	72.80	4.40	29.23	4.40	29.33	4.65	31.00	6.60	44.00
30.....	9.53	63.53	9.77	57.47	2.76	16.40	2.76	16.23	5.30	36.00	7.82	46.00
31.....	11.51	52.32	11.75	53.40	2.86	13.00	2.86	13.00	7.48	34.00	10.56	48.00
32.....	7.99	49.93	8.21	51.31	2.88	15.50	2.88	18.00	5.60	35.00	7.68	48.00
33.....	10.23	60.17	10.47	58.16	2.20	12.94	2.20	12.22	5.95	35.00	8.46	47.00
34.....	10.29	51.25	10.39	57.72	2.80	14.00	2.80	15.55	6.80	34.00	8.64	48.00
35.....	11.31	40.39	11.49	42.55	2.76	9.50	2.76	10.22	9.52	34.00	12.96	48.00
36.....	10.83	49.22	11.97	30.57	3.08	14.00	3.08	7.89	7.48	34.00	18.62	48.00
37.....	11.02	61.22	11.15	65.58	2.75	15.28	2.75	16.17	6.12	34.00	7.99	47.00
38.....	11.98	59.90	12.21	61.05	3.08	15.40	3.08	15.40	7.00	35.00	9.40	47.00
39.....	13.12	54.66	13.32	57.90	3.00	12.50	3.00	13.04	8.40	35.00	11.04	48.00
40.....	9.85	49.25	10.18	46.27	3.24	16.20	3.24	14.72	6.80	34.00	10.56	48.00
Total 40 acres....	407.99	2019.4	415.59	2072.7	127.54	623.84	127.54	636.64	287.44	1363	332.09	1878
Average one acre.	10.199	50.486	10.389	51.82	3.188	15.596	3.188	15.916	7.186	34.07	9.552	46.9

RYE—TABLE XII, continued.

Cost of production and value of products of 40 acres of rye.

OFFICE NO.	TOTAL VALUE OF PRODUCTS RAISED.				PROFIT.				LOSS.			
	Total value per acre and bushel.				Profit per acre and bushel.				Loss per acre and bushel.			
	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years
	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.
1.	10.48	47.64	11.28	62.66			.69	3.84	.02	.08		
2.	9.57	47.85	11.97	59.85			.07	.35	2.14	10.70		
3.	10.12	50.60	14.56	63.30			3.78	16.43	.30	1.50		
4.	11.21	50.95	13.11	65.55	2.51	11.40	4.35	21.75				
5.	9.50	55.88	12.31	64.79	.24	1.41	2.79	14.68				
6.	13.16	47.00	12.76	63.80	4.19	14.97	4.25	21.25				
7.	10.79	46.91	12.37	61.85	1.08	4.70	2.62	13.10				
8.	12.35	49.40	14.16	64.36	2.03	8.12	3.76	17.09				
9.	9.42	52.33	10.62	68.35	1.72	9.56	2.84	22.59				
10.	11.30	46.20	12.92	58.73	1.81	7.24	3.31	15.05				
11.	13.62	45.40	14.62	58.48	2.91	9.70	4.09	16.36				
12.	11.56	48.16	13.75	59.78	1.57	6.54	3.63	15.78				
13.	9.84	54.66	12.18	67.66					2.68	14.89	.60	3.34
14.	13.86	46.20	15.71	62.84	1.65	5.50	3.58	14.12				
15.	10.28	57.11	11.98	70.47					1.69	9.39	.17	1.00
16.	7.48	53.43	10.65	62.65					3.38	24.14	.56	3.29
17.	8.10	50.62	9.70	64.66	.45	2.82	1.93	12.86				
18.	5.00	50.00	8.20	59.28			1.02	8.00	1.75	17.50		
19.	11.25	45.00	12.60	52.50	.20	.80	1.51	6.30				
20.	14.13	47.10	15.63	62.52	6.17	20.57	7.64	30.56				
21.	8.37	46.50	8.57	62.85				10.25	1.74	9.66	1.95	
22.	9.96	49.80	12.76	63.80	.46	2.30	3.01	15.05				
23.	11.28	56.40	13.28	66.40			1.22	6.10	.58	2.90		
24.	14.76	49.20	18.56	66.28	4.47	14.90	8.13	29.03				
25.	10.88	49.45	13.00	65.00	.24	1.08	2.19	10.95				
26.	10.08	50.40	12.08	60.40			1.85	9.25				
27.	9.64	48.20	11.28	62.66	.40	2.00	1.88	10.44				
28.	10.08	50.40	12.88	64.40	.31	1.56	2.87	14.35				
29.	9.05	60.33	11.00	73.33			.08	.53	1.48	9.87		
30.	8.06	52.40	10.58	62.23			.81	4.76	1.47	11.13		
31.	10.34	47.00	13.42	61.00			1.67	7.60	1.17	6.32		
32.	8.48	50.50	10.56	66.00	.49	.57	2.35	14.66				
33.	8.15	47.94	10.66	59.22			.19	1.06	2.08	12.23		
34.	9.60	48.00	11.44	63.55			1.05	5.83	.65	3.25		
35.	12.28	50.50	15.72	58.22	.97	3.11	4.23	15.67				
36.	10.56	48.00	21.70	55.89			9.78	25.32	.27	1.22		
37.	8.87	49.28	10.74	63.17					2.15	11.94	.41	2.41
38.	10.08	50.40	12.48	62.40			.27	1.35	1.90	9.50		
39.	11.40	47.50	14.04	61.04			.72	3.14	1.72	7.16		
40.	10.04	50.20	13.80	62.72	.19	.95	3.62	16.45				
Total 40 acres....	414.98	1986.8	509.63	2514.6	34.16	129.79	97.73	451.93	27.17	162.38	3.69	10.04
Average one acre.	10.374	49.672	12.740	62.866	.854	3.245	2.443	11.298	.679	4.059	.09	2.51

TABLE XIII.—SUMMARY OF TABLE XII.

In the tables on this page have been summarized the results in the foregoing table. The tables show the total cost of producing 40 acres of Rye and the average cost per acre and bushel, the total value of products of 40 acres and the average value per acre and bushel. In the analysis of expenses wages was allowed for team work as well as for labor.

(For a more complete analysis of expenses in this case, both when wages is allowed for team work and when horses or their value is treated as capital, see the next two pages.)

1. Cost of production.

Items.	40 acres. 1896.	One acre.	Bush. Cts.	40 acres 5 years.	One acre.	Bush. Cts.
Plowing	\$45.03	\$1.126	5.67	\$45.13	\$1.128	5.69
Harrowing and seeding	26.48	.662	3.26	26.48	.662	3.29
Cutting	10.69	.267	1.35	10.69	.267	1.34
Fertilizing	62.15	1.554	7.80	62.15	1.554	7.82
Seed	22.61	.565	2.84	31.24	.782	3.95
Shocking and stacking	29.06	.726	3.58	29.06	.726	3.63
Threshing	22.25	.566	2.64	21.85	.546	2.64
Marketing	18.99	.475	2.22	18.26	.456	2.22
Interest	125.97	3.150	15.54	125.97	3.150	15.62
Wear and tear	14.66	.366	1.82	14.66	.366	1.83
Taxes	10.10	.252	1.26	10.10	.252	1.27
Other expenses	20.00	.500	2.50	20.00	.500	2.52
	407.99	10.199	50.48	415.59	10.389	51.82

2. Value of products.

Value of grain	\$287.44	\$7.186	34.07	\$382.09	\$9.552	46.95
Value of straw	127.54	3.188	15.60	127.54	3.188	15.92
Total value	414.98	10.374	49.67	509.63	12.740	62.87

Profit and Loss.

Profit	\$34.16	\$.854	32.45	\$97.73	\$2.442	11.30
Loss	27.17	.679	40.59	3.69	.092	.25
Balance profit	\$6.99	\$.175	8.10	\$94.04	\$2.351	11.05

COST OF PRODUCTION.

TABLE XIV.—COST OF PRODUCTION AND VALUE OF 40 ACRES OF RYE.

The data upon which the calculations in the tables on this page are based may also be found in tables 1, 2, 3. "Cost of Production" is shown in table 1. "Value of Products" is shown in table 2. Table 3 shows the surplus value or cost, as the case may be. In table 4 is presented the "Annual Investment" and the respective amounts of interest and necessary profit at 12 per cent. on same and upon the value of the machinery used, and also the "Surplus Value" above the sum of these expenses. It should be noticed that in this presentation wages has been allowed for team work in place of treating horses, or their value, as other capital.

1. Cost of production.

Items.	40 acres.	One acre.	Bush. Cts.
1 Plowing .....185 hours at 23.5 cents	\$43.48	\$1.087	5.23
2 Harrowing, etc .....72 hours at 23.5 cents	16.92	.423	2.05
3 Seeding .....40 hours at 23.5 cents	9.40	.235	1.14
4 Cutting .....41 hours at 23.5 cents	9.64	.241	1.13
5 Shocking .....55 hours at 12.3 cents	6.71	.168	.81
6 Stacking, man and team .....61 hours at 23.5 cents	14.34	.358	1.74
7 Stacking, extra labor.....61 hours at 12.2 cents	7.44	.186	.90
8 Threshing, labor.....94 hours at 12.2 cents	11.47	.287	1.39
9 Threshing, machine .....824 bush. at 1 cent	8.24	.206	1.00
10 Marketing .....72 hours at 23.5 cents	16.92	.423	2.05
11 Seed .....64 bush. at 50 cents	32.00	.800	3.88
12 Taxes .....40 acres at 25.3 cents	10.12	.253	1.23
13 Fertilizing, clover and .....86 loads of manure	30.00	.750	3.64
14 Other expenses.....40 acres at 50 cents	20.00	.500	2.43
15 Depreciation .....146.80 dollars at 10 per cent.	14.68	.367	1.78
Annual investment	\$251.36	\$6.284	30.50
16 Interest machinery .....146.80 dollars at 6 per cent	8.81	.220	1.07
17 Interest on investment...251.36 dollars at 6 per cent	15.08	.377	1.84
18 Interest, land.....1,780.00 dollars at 6 per cent	106.80	2.670	12.96
Total	\$382.05	\$9.551	46.37

Total investment, \$2,178.16. Average investment per acre, \$54.45. Team work, 47 days. Labor, 68 days. Value per acre of land, \$44.50.

2. Value of products.

1 824 bushels of rye at 47 cents.....	\$387.28	\$9.682	47.00
2 40 acres of straw, \$2.10.....	84.00	2.100	10.19
	\$471.28	\$11.782	57.19

3. Surplus value.

1 Surplus value—profits	\$39.23	\$2.231	10.82
-------------------------------	---------	---------	-------

Equivalent to 4.09 on capital invested.

Annual investment, interest and necessary profit at 12 per cent. on same and upon the value of machinery used; also the surplus value of products above the sum of these expenses. (This surplus capitalized at 12 per cent. and credited to the land gives the value of the land for raising rye.

Annual investment	\$251.36	\$6.284	30.50
Machinery .....\$146.80 at 12 per cent	17.62	.440	2.14
Annual investment .....\$251.36 at 12 per cent	30.16	.754	3.66
Total expenses less rent	\$299.14	\$7.478	36.30
Surplus credited to land.....	*172.14	4.304	20.89
Total	\$471.28	\$11.782	57.19

*Capitalized at 12 per cent. equivalent to \$1,434.5 or \$35.86 per acre. This is \$8.64 per acre below the value reported by the farmers.

TABLE XV.—COST OF PRODUCTION AND VALUE OF 40 ACRES OF RYE.

The data upon which the calculations in the table on this page are based may also be found in tables 1, 2, 3. "Cost of Production" is shown in table 1. "Value of Product" is shown in table 2. Table 3 shows the "Surplus Value" above cost. In table 4 is shown the "Annual Investment" and the respective amounts of interest and necessary profit at 12 per cent. on same and upon the value of the machinery and horses used, also the surplus value of these expenses. In this presentation horses, or their value, have been treated as other capital.

1. Cost of production.

Items.	40 acres.	One acre.	Bush. Cts.
1 Plowing .....185 hours at 12.2 cents	\$22.57	\$.564	2.74
2 Harrowing, etc .....73 hours at 12.2 cents	8.78	.219	1.07
3 Seeding .....40 hours at 12.2 cents	4.88	.122	.59
4 Cutting .....41 hours at 12.2 cents	5.00	.125	.61
5 Shocking .....55 hours at 12.2 cents	6.71	.168	.81
6 Stacking .....122 hours at 12.2 cents	14.88	.372	1.81
7 Threshing labor .....94 hours at 12.2 cents	11.47	.287	1.39
8 Threshing machine .....824 bush. at 1 cent	8.24	.206	1.00
9 Marketing .....72 hours at 12.2 cents	8.78	.220	1.07
10 Seed .....64 bush. at 50 cents	32.00	.800	3.88
11 Taxes .....40 acres at 25.3 cents	10.12	.253	1.23
12 Maintenance horses .....40 acres at 80 cents	32.00	.800	3.88
13 Fertilizing, clover and .....86 loads manure	30.00	.750	3.64
14 Other expenses .....40 acres at 50 cents	20.00	.500	2.43
15 Depreciation machinery .....\$146.80 at 10 per cent	14.68	.367	1.78
16 Depreciation horses .....52.80 at 10 per cent	5.28	1.32	.64
Annual investment			
17 Interest machinery .....\$235.39	\$235.39	\$5.885	28.57
18 Interest horses .....\$146.80 dollars at 6 per cent.	8.81	.220	1.07
19 Interest on investment .....\$235.39 dollars at 6 per cent.	3.17	.979	.38
20 Interest land .....\$1,780.00 dollars at 6 per cent.	14.12	.353	1.71
Total	\$368.29	\$9.207	44.69

Total investment, \$2,214.99. Average investment per acre, \$55.37. Team work, 47 days. Labor, 68 days. Value per acre of land, \$44.50.

2. Value of products.

1 824 bushels rye at .469 cents; vaerage 5 years.....	387.28	9.682	47.00
2 40 acres straw, \$2.10.....	84.00	2.100	10.19
Total	\$471.28	\$11.782	57.19

3. Surplus Value.

Surplus value—profits	\$102.99	\$2.575	12.50
-----------------------	----------	---------	-------

Equivalent to 4.65 per cent. on capital invested.

Annual investment, interest and necessary profit at 12 per cent. on same and upon the value of machinery and horses used; also the surplus value of products above the sum of these expenses. (This surplus capitalized at 12 per cent. and credited to land gives the value of the land for raising rye.)

Annual investment	\$235.39	5.885	28.57
Machinery .....\$146.80 at 12 per cent	17.62	.440	2.14
Horses .....52.80 at 12 per cent	6.34	.159	.77
Annual investment.....\$235.39 at 12 per cent	28.25	.706	3.43
Total expenses less rent.....	\$287.60	\$7.190	34.81
Surplus credited to land	*183.68	4.592	22.28
Total	\$471.28	\$11.782	57.19

*Capitalized at 12 per cent. equivalent to \$1,592.66 or \$37.31 per acre. This is \$7.19 per acre below the value reported by the farmers.

In relation to the cost of producing 40 acres of rye as presented in the four preceding tables it is, perhaps, proper to repeat here a few facts to which attention has already been called.

In table XII, covering six pages, the cost per each acre in detail, the total cost of 40 acres and the average cost per acre are presented. Table XIII is made up of the totals of table XII. Table XIV is a more complete analysis of table XIII including besides the expenses of that table, interest on the value of the machinery used and upon the sum of the annual investments. These items of expenses were added because they are unavoidable in farming and constitute a proper charge against the products.

It should be noticed that in these three tables the expenses in farming arising from the use of horses for motor power was arrived at by allowing wages, at ruling rates in the respective localities, for team work. It appeared, however, that this is not the proper way in which to treat expenses of this nature. Work horses are usually regarded as capital invested. This being the case, expenses from this source are with a few exceptions similar to the expenses of other capital used and should, therefore, be treated accordingly. Another analysis of the cost of production was therefore made, in which the expenses arising from the horses used were treated from this point of view. This analysis is presented in table XV and includes in the expenses, wages for man's labor only, while for horses, depreciation and interest on their value and actual yearly cost, per acre, of their maintenance was allowed as expense. This method of treating expenses of this kind does not greatly affect the total cost, but is undoubtedly proper, at least in most cases.

The average cost of growing one acre of wheat as computed from table XV is shown below:

Items.	One acre.	One Bush.
	\$	Cts.
Plowing .....	.564	2.74
Harrowing, etc .....	.219	1.07
Seeding .....	.122	.59
Cutting .....	.125	.61
Shocking .....	.168	.81
Stacking .....	.372	1.81
Threshing labor .....	.287	1.39
Threshing machine .....	.206	1.00
Marketing .....	.900	3.88
Seed .....	.253	1.23
Taxes .....	.800	3.88
Maintenance horses .....	.750	3.64
Fertilizing .....	.500	2.43
Other expenses .....	.367	1.78
Depreciation machinery .....	.132	.64
Depreciation horses		
Annual investment	\$5.885	2.857
Interest, machinery .....	.220	1.07
Interest, horses .....	.079	.38
Interest, annual investment .....	.353	1.71
Interest, land	2.670	12.96
Total	\$9.207	44.69

BARLEY—TABLE XVI.

Cost of production and value of products of 40 acres of barley.

OFFICE NO.	PLOWING.				HARROWING AND SEEDING.				CUTTING.			
	Cost per acre and bushel.				Cost per acre and bushel.				Cost per acre and bushel.			
	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years
	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.
1.....	1.00	3.34	1.00	3.57	.65	2.16	.65	2.32	.25	.83	.25	.89
2.....	1.40	4.66	1.40	4.38	.90	3.00	.90	2.81	.30	1.00	.30	.93
3.....	1.00	3.34	1.00	2.64	.55	1.83	.55	1.44	.30	1.00	.30	.79
4.....	.85	2.43	.85	2.74	.63	1.80	.63	2.03	.25	.71	.25	.81
5.....	1.00	2.86	1.00	3.34	.50	1.42	.50	1.66	.25	.71	.25	.83
6.....	.80	2.36	.80	2.85	.45	1.32	.45	1.60	.18	.53	.18	.64
7.....	1.00	2.86	1.00	3.33	.77	2.20	.77	2.56	.20	.57	.20	.67
8.....	1.00	2.70	1.00	3.33	.50	1.36	.50	1.67	.25	.68	.25	.83
9.....	.75	2.14	.75	2.34	.63	1.80	.63	1.97	.25	.71	.25	.79
10.....	1.60	4.58	1.60	5.71	.90	2.57	.90	3.21	.30	.85	.30	1.07
11.....	1.35	3.75	1.35	4.23	.68	1.89	.68	2.13	.27	.75	.27	.85
12.....	1.00	3.33	1.00	3.13	.65	2.17	.65	2.04	.15	.50	.15	.47
13.....	1.50	5.55	1.50	5.00	.72	2.66	.72	2.40	.30	1.12	.30	1.00
14.....	1.16	4.64	1.16	4.64	1.07	4.28	1.07	4.28	.45	1.80	.45	1.80
15.....	1.00	3.57	1.00	3.57	.50	1.78	.50	1.78	.20	.71	.20	.71
16.....	2.90	5.71	2.90	6.67	1.08	3.07	1.08	3.60	.45	1.29	.45	1.60
17.....	1.00	3.33	1.00	3.71	.55	1.84	.55	2.03	.20	.67	.20	.74
18.....	1.00	3.57	1.00	3.70	.40	1.44	.40	1.48	.20	.72	.20	.74
19.....	1.25	3.57	1.25	3.91	.75	2.14	.75	2.34	.27	.78	.27	.83
20.....	1.00	2.86	1.00	3.03	.70	2.00	.70	2.13	.30	.86	.30	.91
21.....	1.20	3.63	1.20	4.00	.55	1.64	.55	1.84	.30	.91	.30	1.00
22.....	1.24	4.13	1.24	3.87	.64	2.14	.64	2.00	.27	.90	.27	.85
23.....	1.37	4.66	1.37	4.56	.82	2.73	.82	2.74	.37	1.23	.37	1.23
24.....	1.20	3.43	1.20	3.64	.98	2.80	.98	2.98	.25	.71	.25	.76
25.....	1.00	2.86	1.00	3.03	.57	1.63	.57	1.85	.20	.67	.20	.60
26.....	1.00	3.57	1.00	3.33	.50	1.78	.50	1.66	.20	.72	.20	.67
27.....	1.13	3.77	1.13	3.53	.50	1.66	.50	1.56	.23	.77	.23	.72
28.....	1.00	2.50	1.00	3.12	.70	1.75	.70	2.19	.25	.62	.25	.78
29.....	1.00	3.70	1.00	4.55	.65	2.41	.65	2.95	.42	1.56	.42	1.91
30.....	1.00	3.12	1.00	2.86	.63	1.96	.63	1.79	.30	.95	.30	.86
31.....	1.25	4.84	1.25	4.17	.63	2.42	.63	2.10	.30	1.15	.30	1.00
32.....	1.00	3.57	1.00	3.33	.60	2.14	.60	2.32	.25	.89	.25	.83
33.....	1.50	3.75	1.50	4.28	.60	1.60	.60	1.72	.30	.75	.30	.86
34.....	1.25	3.90	1.25	3.79	.59	1.83	.59	1.78	.25	.78	.25	.75
35.....	1.00	3.33	1.00	3.33	.60	2.00	.60	2.00	.20	.67	.20	.67
36.....	.84	2.40	.84	2.80	.66	1.89	.66	2.20	.30	.85	.30	1.00
37.....	1.13	4.04	1.13	3.77	.53	1.89	.53	1.77	.25	.89	.25	.83
38.....	1.25	6.25	1.25	6.25	1.07	5.35	1.07	5.35	.25	1.25	.25	1.25
39.....	1.25	4.03	1.25	4.62	.55	1.78	.55	2.04	.25	.80	.25	.92
40.....	.86	2.86	.86	3.07	.52	1.66	.52	1.87	.23	.76	.23	.82
Total 40 acres....	45.13	145.39	45.13	151.72	26.47	85.72	26.47	90.19	10.69	34.52	10.69	36.11
Average one acre.	1.128	3.635	1.128	3.793	.662	2.143	.662	2.255	.267	.863	.267	.903

COST OF PRODUCTION.

73

BARLEY—TABLE XVI, continued.

Cost of production and value of products of 40 acres of barley.

OFFICE NO.	FERTILIZING.				SEED.				SHOCKING AND STACKING.			
	Cost per acre and bushel.				Cost per acre and bushel.				Cost per acre and bushel.			
	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years
	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.
1.....	3.10	10.33	3.10	11.07	.56	1.87	.90	3.21	.68	2.27	.68	2.43
2.....	2.40	8.00	2.40	7.50	.60	2.00	.88	2.75	1.20	4.00	1.20	3.75
3.....	2.75	9.16	2.75	7.25	.54	1.80	.92	2.43	.38	2.77	.83	2.18
4.....	3.00	8.57	3.00	9.67	.60	1.72	.62	2.00	.50	1.43	.50	1.62
5.....	3.00	8.57	3.00	10.00	.64	1.83	.90	3.00	.84	2.40	.84	2.80
6.....	3.00	8.82	3.00	10.71	.56	1.65	.92	3.29	.70	2.06	.70	2.50
7.....	3.00	8.57	3.00	10.00	.60	1.71	.92	3.07	.60	1.71	.60	2.00
8.....	3.00	8.11	3.00	10.00	.80	2.16	1.13	3.77	.90	2.43	.90	3.00
9.....	3.50	10.00	3.50	10.94	.38	1.08	.59	1.84	.54	1.55	.54	1.68
10.....	3.00	8.58	3.00	10.71	.84	2.40	1.32	4.72	.81	2.32	.81	2.89
11.....	3.00	8.34	3.00	9.39	.60	1.67	.88	2.75	.81	2.75	.81	2.54
12.....	3.00	10.00	3.00	9.36	.60	2.00	.80	2.50	.95	3.17	.96	2.97
13.....	2.40	8.88	2.40	8.00	.42	1.55	.70	2.34	.95	3.52	.96	3.16
14.....	2.25	9.00	2.25	9.00	.65	2.60	1.12	4.48	.55	2.20	.56	2.20
15.....	2.50	8.93	2.50	8.93	.68	2.43	1.12	4.01	.75	2.68	.76	2.68
16.....	2.50	7.14	2.50	8.33	.52	1.49	.86	2.87	.73	2.09	.73	2.43
17.....	2.50	8.33	2.50	9.26	.60	2.00	.90	3.34	.59	1.96	.59	2.18
18.....	2.50	8.93	2.50	9.26	.42	1.50	.65	2.42	.48	1.72	.48	1.78
19.....	2.50	7.15	2.50	7.81	.54	1.54	.70	2.19	.45	1.28	.45	1.41
20.....	3.25	9.29	3.25	9.85	.56	1.60	.90	2.73	.84	2.40	.84	2.54
21.....	2.30	6.99	2.30	7.67	.66	2.00	1.12	3.78	.65	1.97	.65	2.16
22.....	2.30	7.67	2.30	7.18	.65	2.16	.99	3.09	.55	1.83	.55	1.72
23.....	2.00	6.67	2.00	6.67	.56	1.87	.86	2.86	.47	1.57	.47	1.57
24.....	2.30	6.57	2.30	6.97	.60	1.72	.96	2.90	.87	2.48	.87	2.64
25.....	2.20	6.29	2.20	6.67	.68	1.94	1.06	3.22	.85	2.49	.85	2.57
26.....	2.75	9.82	2.75	9.17	.60	2.14	.96	3.20	.90	3.22	.90	3.00
27.....	2.50	8.33	2.50	7.82	.63	2.10	1.02	3.19	.86	2.87	.86	2.68
28.....	2.20	5.50	2.20	6.87	.56	1.40	.92	2.87	.78	1.95	.78	2.44
29.....	2.00	7.40	2.00	9.09	.42	1.56	.64	2.90	1.00	3.70	1.00	4.55
30.....	2.40	7.50	2.40	6.86	.70	2.19	1.10	3.15	.60	1.88	.60	1.71
31.....	2.40	9.22	2.40	8.00	.63	2.42	1.15	3.83	.78	3.00	.78	2.60
32.....	3.25	11.61	3.25	10.83	.65	2.32	.99	3.00	.35	1.25	.35	1.16
33.....	3.50	8.75	3.50	10.00	.49	1.22	1.10	3.15	.64	1.60	.64	1.83
34.....	2.25	7.04	2.25	6.82	.68	2.13	1.10	3.32	.70	2.19	.70	2.12
35.....	2.50	8.33	2.50	8.33	.63	2.10	1.06	3.53	.36	2.87	.36	2.87
36.....	2.25	6.43	2.25	7.50	.56	1.60	.90	3.00	.38	1.66	.38	1.93
37.....	2.40	8.57	2.40	8.00	.70	2.50	1.12	3.73	.75	2.68	.75	2.50
38.....	2.20	11.00	2.20	11.00	.56	2.80	.90	4.50	.75	3.75	.75	3.75
39.....	2.25	7.26	2.25	8.33	.70	2.26	1.15	4.26	1.00	3.23	1.00	3.71
40.....	3.00	10.00	3.00	10.72	.60	2.00	.56	2.00	.41	1.36	.41	1.46
Total 40 acres....	05.10	335.65	105.10	351.54	23.97	77.03	37.39	125.15	29.05	93.70	29.05	97.71
Average one acre.	2.627	8.391	2.627	8.788	.599	1.926	.935	3.129	.726	2.342	.726	2.443

BARLEY—TABLE XVI, continued.

Cost of production and value of products of 40 acres of barley.

OFFICE No.	THRESHING.				MARKETING.				INTEREST.			
	Cost per acre and bushel.				Cost per acre and bushel.				Cost per acre and bushel.			
	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years
\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	
1.....	.60	2.00	.56	2.00	.15	.50	.14	.50	3.60	12.00	3.60	12.85
2.....	.75	2.50	.80	2.50	.30	1.00	.32	1.00	3.72	12.40	3.72	11.62
3.....	.60	2.00	.76	2.00	.30	1.00	.38	1.00	3.84	12.80	3.84	10.10
4.....	1.05	3.00	.93	3.00	.70	2.00	.62	2.00	1.80	5.14	1.80	5.80
5.....	.70	2.00	.60	2.00	.35	1.00	.30	1.00	2.70	7.72	2.70	9.00
6.....	.68	2.00	.56	2.00	1.02	3.00	.84	3.00	1.50	4.41	1.50	5.36
7.....	.52	1.49	.45	1.50	.70	2.00	.60	2.00	3.00	8.57	3.00	10.00
8.....	1.11	3.00	.90	3.00	.74	2.00	.60	2.00	3.60	9.73	3.60	12.00
9.....	.70	2.00	.64	2.00	1.05	3.00	.96	3.00	1.50	4.29	1.50	4.68
10.....	.70	2.00	.56	2.00	.35	1.00	.28	1.00	1.80	5.14	1.80	6.43
11.....	.72	2.00	.64	2.00	1.08	3.00	.96	3.00	2.40	6.66	2.40	7.50
12.....	.45	1.50	.48	1.50	.60	2.00	.64	2.00	3.00	10.00	3.00	9.36
13.....	.68	2.52	.75	2.50	.54	2.00	.60	2.00	4.80	17.77	4.80	16.00
14.....	.50	2.00	.50	2.00	.50	2.00	.50	2.00	4.20	16.80	4.20	16.80
15.....	.42	1.50	.42	1.50	.42	1.50	.42	1.50	4.38	15.64	4.38	15.64
16.....	1.05	3.00	.90	3.00	.70	2.00	.60	2.00	2.70	7.72	2.70	9.00
17.....	.75	2.50	.68	2.52	.60	2.00	.54	2.00	1.50	5.00	1.50	5.56
18.....	.84	3.00	.81	3.00	.56	2.00	.64	2.00	1.20	4.29	1.20	4.44
19.....	1.05	3.00	.96	3.00	.70	2.00	.64	2.00	3.48	9.94	3.48	10.88
20.....	.53	1.51	.49	1.48	.35	1.00	.33	1.00	1.08	3.09	1.08	3.27
21.....	.82	2.48	.75	2.50	.33	1.00	.30	1.00	3.00	9.09	3.00	10.00
22.....	.75	2.50	.80	2.50	.60	2.00	.64	2.00	3.00	10.00	3.00	9.37
23.....	.60	2.00	.60	2.00	.60	2.00	.60	2.00	4.50	15.00	4.50	15.00
24.....	.88	2.52	.82	2.48	.35	1.00	.33	1.00	2.40	6.86	2.40	7.27
25.....	.88	2.51	.82	2.48	.35	1.00	.33	1.00	3.90	11.14	3.90	11.69
26.....	.56	2.00	.60	2.00	.56	2.00	.60	2.00	3.42	12.21	3.42	11.40
27.....	.45	1.50	.48	1.50	.60	2.00	.64	2.00	2.70	9.00	2.70	8.43
28.....	.60	1.50	.48	1.50	.20	.50	.16	.50	3.60	9.00	3.60	11.25
29.....	.54	2.00	.44	2.00	.54	2.00	.44	2.00	3.18	11.77	3.18	14.46
30.....	.32	1.00	.35	1.00	.32	1.00	.35	1.00	3.60	11.25	3.60	10.29
31.....	.39	1.50	.45	1.50	.26	1.00	.30	1.00	4.50	17.30	4.50	15.00
32.....	.70	2.50	.75	2.50	.60	2.00	.60	2.00	1.80	6.43	1.80	6.00
33.....	.80	2.00	.70	2.00	.60	1.50	.52	1.48	3.30	8.25	3.30	9.42
34.....	.64	2.00	.66	2.00	.64	2.00	.66	2.00	3.12	9.75	3.12	9.45
35.....	.60	2.00	.60	2.00	.45	1.50	.45	1.50	3.90	13.00	3.90	13.00
36.....	.70	2.00	.60	2.00	.70	2.00	.60	2.00	3.75	10.71	3.75	12.50
37.....	.55	2.00	.60	2.00	.70	2.50	.75	2.50	3.30	14.16	3.96	13.20
38.....	.40	2.00	.40	2.00	.40	2.00	.40	2.00	3.60	18.00	3.60	18.00
39.....	.47	1.52	.41	1.52	.46	1.48	.41	1.52	5.70	18.39	5.70	21.11
40.....	.60	2.00	.55	2.00	.90	3.00	.84	3.00	3.24	10.80	3.24	11.57
Total 40 acres....	26.66	84.05	25.26	83.99	21.83	69.48	20.73	69.50	125.97	411.22	125.97	424.70
Average one acre.	.666	2.101	.631	2.099	.546	1.737	.518	1.737	3.15	10.180	3.15	10.62

BARLEY—TABLE XVI, continued.

Cost of production and value of products of 40 acres of barley.

OFFICE NO.	WEAR AND TEAR.				TAXES.				OTHER EXPENSES.			
	Cost per acre and bushel.				Cost per acre and bushel.				Cost per acre and bushel.			
	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years
\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	
1.....	.60	2.00	.60	2.15	.25	.83	.25	.89	.50	1.67	.50	1.79
2.....	.60	2.00	.60	1.88	.25	.83	.25	.78	.50	1.67	.50	1.57
3.....	.25	.83	.25	.65	.25	.83	.25	.65	.50	1.67	.50	1.31
4.....	.34	.97	.34	1.09	.25	.71	.25	.81	.50	1.43	.50	1.62
5.....	.33	.95	.33	1.10	.25	.71	.25	.83	.50	1.43	.50	1.67
6.....	.33	.97	.33	1.18	.25	.73	.25	.89	.50	1.47	.50	1.79
7.....	.23	.66	.23	.77	.25	.71	.25	.83	.50	1.43	.50	1.67
8.....	.30	.81	.30	1.00	.25	.67	.25	.83	.50	1.35	.50	1.67
9.....	.17	.49	.17	.53	.25	.71	.25	.78	.50	1.43	.50	1.57
10.....	.15	.42	.15	.54	.25	.71	.25	.89	.50	1.43	.50	1.79
11.....	.33	.91	.33	1.04	.25	.69	.25	.78	.50	1.39	.50	1.57
12.....	.40	1.33	.40	1.25	.25	.83	.25	.78	.50	1.67	.50	1.57
13.....	.20	.74	.20	.66	.25	.93	.25	.83	.50	1.87	.50	1.67
14.....	.50	2.00	.50	2.06	.30	1.20	.30	1.20	.50	2.00	.50	2.00
15.....	.58	2.07	.58	2.07	.30	1.07	.30	1.07	.50	1.79	.50	1.79
16.....	.47	1.35	.47	1.57	.25	.71	.25	.83	.50	1.43	.50	1.67
17.....	.25	.83	.25	.92	.25	.83	.25	.92	.50	1.67	.50	1.85
18.....	.27	.83	.27	1.00	.25	.89	.25	.92	.50	1.79	.50	1.85
19.....	.60	1.72	.60	1.88	.25	.71	.25	.78	.50	1.42	.50	1.56
20.....	.22	.62	.22	.67	.25	.71	.25	.75	.50	1.43	.50	1.51
21.....	.33	1.00	.33	1.10	.25	.75	.25	.83	.50	1.51	.50	1.67
22.....	.23	.77	.23	.72	.25	.83	.25	.78	.50	1.67	.50	1.57
23.....	.50	1.67	.50	1.67	.25	.83	.25	.85	.50	1.67	.50	1.67
24.....	.38	1.08	.38	1.15	.25	.71	.25	.75	.50	1.43	.50	1.51
25.....	.40	1.14	.40	1.22	.25	.71	.25	.75	.50	1.43	.50	1.52
26.....	.27	.96	.27	.90	.25	.89	.25	.83	.50	1.79	.50	1.67
27.....	.16	.53	.16	.50	.25	.83	.25	.78	.50	1.67	.50	1.57
28.....	.17	.43	.17	.53	.25	.62	.25	.78	.50	1.25	.50	1.57
29.....	.35	1.29	.35	1.59	.25	.94	.25	1.13	.50	1.86	.50	2.27
30.....	.13	.40	.13	.37	.25	.78	.25	.71	.50	1.56	.50	1.42
31.....	.07	.26	.07	.23	.25	.96	.25	.82	.50	1.93	.50	1.67
32.....	.24	.86	.24	.80	.25	.89	.25	.83	.50	1.79	.50	1.66
33.....	.43	1.07	.43	1.23	.25	.63	.25	.71	.50	1.25	.50	1.43
34.....	.49	1.53	.49	1.48	.25	.78	.25	.76	.50	1.57	.50	1.53
35.....	.22	.73	.22	.73	.25	.83	.25	.83	.50	1.67	.50	1.67
36.....	.50	1.43	.50	1.67	.25	.71	.25	.83	.50	1.43	.50	1.67
37.....	.75	2.68	.75	2.50	.25	.89	.25	.83	.50	1.77	.50	1.67
38.....	1.00	5.00	1.00	5.00	.25	1.25	.25	1.25	.50	2.50	.50	2.50
39.....	.80	2.58	.80	2.96	.25	.80	.25	.93	.50	1.61	.50	1.85
40.....	.10	.33	.10	.35	.25	.83	.25	.89	.50	1.66	.50	1.78
Total 40 acres....	14.68	48.34	14.64	50.65	10.10	32.47	10.10	33.90	20.00	64.46	20.00	67.36
Average one acre.	.366	1.208	.366	1.266	.252	.812	.252	.847	.50	1.611	.50	1.684

BARLEY—TABLE XVI, continued.

Cost of production and value of products of 40 acres of barley.

OFFICE NO.	TOTAL COST OF RAISING PRODUCTS.				VALUE OF STRAW.				VALUE OF GRAIN.			
	Cost per acre and bushel.				Value per acre and bushel.				Value per acre and bushel.			
	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years
\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	
1.....	11.94	39.80	12.23	43.67	3.84	12.80	3.84	13.71	8.40	.28	12.60	.45
2.....	12.92	43.06	13.27	41.47	4.20	14.00	4.20	13.12	9.00	.30	14.08	.44
3.....	11.71	39.03	12.33	32.44	4.25	14.16	4.25	11.18	8.10	.27	17.48	.46
4.....	10.47	29.81	10.28	33.19	6.00	17.14	6.00	19.35	10.50	.30	13.95	.45
5.....	11.06	31.60	11.17	37.23	4.93	14.08	4.93	16.43	11.20	.32	13.60	.45
6.....	9.97	29.32	10.09	35.81	3.96	11.64	3.96	14.14	9.52	.28	12.88	.46
7.....	11.37	32.48	11.52	38.40	5.22	14.19	5.22	17.40	10.50	.30	13.80	.46
8.....	12.95	35.00	12.93	43.10	5.10	13.78	5.10	17.00	11.84	.32	13.50	.45
9.....	10.22	29.20	10.28	32.12	4.10	11.71	4.10	12.81	10.85	.31	13.94	.47
10.....	11.20	32.00	11.47	40.96	3.60	10.28	3.60	12.85	9.80	.28	12.32	.44
11.....	11.99	33.30	12.07	37.78	5.40	15.00	5.40	16.87	10.80	.30	14.08	.44
12.....	11.55	38.50	11.82	36.93	4.25	14.16	4.25	13.28	9.00	.30	12.80	.40
13.....	13.26	49.11	13.67	45.56	4.76	17.63	4.76	15.53	7.56	.28	14.10	.47
14.....	12.63	50.52	13.10	52.40	3.30	13.20	3.30	13.20	6.50	.26	11.25	.45
15.....	12.23	43.67	12.67	45.25	4.08	14.57	4.08	14.57	7.56	.27	12.60	.45
16.....	12.95	37.00	13.04	43.47	4.00	11.42	4.00	13.33	9.10	.26	12.90	.43
17.....	9.29	30.96	9.46	35.03	3.00	10.00	3.00	11.11	9.00	.30	12.15	.45
18.....	8.62	30.78	8.80	32.59	3.20	11.42	3.20	11.85	7.84	.28	11.61	.43
19.....	12.34	35.25	12.35	38.59	4.00	11.42	4.00	12.50	9.45	.27	11.20	.36
20.....	9.58	27.37	9.86	29.87	4.48	12.80	4.48	13.57	9.80	.28	14.85	.46
21.....	10.89	33.00	11.25	37.50	3.60	10.90	3.60	12.00	9.57	.29	13.50	.45
22.....	10.98	36.60	11.41	35.65	3.50	11.66	3.50	10.96	8.70	.29	14.08	.44
23.....	12.64	41.80	12.84	42.80	4.32	14.40	4.32	14.40	8.40	.28	12.90	.43
24.....	10.96	31.31	11.24	34.06	3.50	10.00	3.50	10.60	10.50	.30	15.94	.48
25.....	11.78	33.65	12.08	36.60	3.75	10.71	3.75	11.36	10.50	.30	15.51	.47
26.....	11.51	41.10	11.95	39.83	4.14	14.78	4.14	13.80	8.40	.30	14.40	.48
27.....	10.51	35.03	10.97	34.28	4.48	14.93	4.48	14.00	8.40	.28	14.40	.45
28.....	10.81	27.02	11.01	34.40	4.16	10.40	4.16	13.00	11.20	.28	14.72	.46
29.....	10.85	40.19	10.87	49.40	2.70	10.00	2.70	12.27	7.56	.28	9.46	.43
30.....	10.75	33.59	11.21	32.02	5.10	15.93	5.10	14.57	8.96	.28	15.40	.44
31.....	11.96	46.00	12.58	41.93	4.59	17.65	4.59	15.30	7.28	.28	13.80	.46
32.....	10.15	36.25	10.58	35.26	3.60	12.86	3.60	12.00	8.12	.29	13.20	.44
33.....	12.91	32.27	13.34	38.11	3.90	9.75	3.90	11.11	11.20	.28	15.40	.44
34.....	11.36	35.50	11.82	35.81	4.05	12.65	4.05	12.27	9.60	.30	16.17	.49
35.....	11.71	39.03	12.14	40.46	3.68	12.26	3.68	12.26	8.40	.28	14.10	.47
36.....	11.59	33.11	11.73	39.10	4.35	12.43	4.35	29.00	9.80	.28	13.50	.45
37.....	12.48	44.57	12.99	43.30	4.32	15.42	4.32	14.33	7.84	.28	13.50	.45
38.....	12.23	61.15	12.57	62.85	4.16	20.80	4.16	20.80	5.60	.28	9.00	.45
39.....	14.18	45.74	14.52	53.77	4.08	13.19	4.08	15.11	8.68	.28	12.42	.46
40.....	11.21	37.26	11.07	39.53	4.00	13.33	4.00	14.28	9.00	.30	14.00	.50
Total 40 acres....	459.61	1482.0	470.53	1582.5	165.60	529.45	165.65	567.22	364.03	11.49	540.99	17.99
Average one acre.	11.490	37.051	11.763	39.563	4.141	13.236	4.141	14.18	9.101	.287	13.525	.449

COST OF PRODUCTION.

BARLEY—TABLE XVI, continued.

Cost of production and value of products of 40 acres of barley.

OFFICE NO.	TOTAL VALUE OF PRODUCTS RAISED.				-PROFIT.				Loss.			
	Total value per acre and bushel.				Profit per acre and bushel.				Loss per acre and bushel.			
	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years
\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	Cts.	Cts.	
1.....	12.24	40.80	16.44	58.71	.30	1.00	4.21	15.04	.....	.....	.....	.....
2.....	13.20	44.00	18.28	57.12	.28	.94	5.01	15.65	.....	.....	.....	.....
3.....	12.35	41.16	21.73	57.13	.64	2.13	9.40	24.74	.....	.....	.....	.....
4.....	16.50	47.14	19.95	64.35	6.03	17.23	9.66	31.16	.....	.....	.....	.....
5.....	16.13	46.08	18.43	61.43	5.07	14.48	7.26	24.20	.....	.....	.....	.....
6.....	13.48	39.64	16.84	60.14	3.51	10.32	6.81	24.33	.....	.....	.....	.....
7.....	15.72	44.19	19.02	63.40	4.35	11.71	7.50	25.06	.....	.....	.....	.....
8.....	16.94	45.78	18.60	62.00	3.99	10.78	5.67	18.90	.....	.....	.....	.....
9.....	14.95	42.71	18.04	59.81	4.73	13.51	7.76	27.69	.....	.....	.....	.....
10.....	13.40	38.28	15.92	56.85	2.20	6.28	4.45	15.89	.....	.....	.....	.....
11.....	16.20	45.00	19.48	60.87	4.21	11.70	7.41	23.09	.....	.....	.....	.....
12.....	13.25	44.16	17.05	53.28	1.70	5.66	5.23	16.35	.....	.....	.....	.....
13.....	12.32	45.63	18.86	62.53	.....	.....	5.19	16.97	.....	.94	3.48	.....
14.....	9.80	39.20	14.55	58.20	.....	.....	1.45	5.80	.....	2.83	11.32	.....
15.....	11.64	41.57	16.68	59.57	.....	.....	4.01	14.32	.....	.59	2.10	.....
16.....	13.10	37.42	16.90	56.33	.15	.42	3.86	12.86	.....	.....	.....	.....
17.....	12.00	40.00	15.15	56.11	2.71	9.04	5.69	21.08	.....	.....	.....	.....
18.....	11.04	39.42	14.81	54.85	2.42	8.64	6.01	22.26	.....	.....	.....	.....
19.....	13.45	38.42	15.20	47.50	1.11	3.17	2.85	8.91	.....	.....	.....	.....
20.....	14.28	40.80	19.33	58.57	4.70	13.43	9.47	28.70	.....	.....	.....	.....
21.....	13.17	39.90	17.10	57.00	2.28	6.90	5.85	19.50	.....	.....	.....	.....
22.....	12.20	40.66	17.58	54.96	1.22	4.06	6.17	19.31	.....	.....	.....	.....
23.....	12.72	42.40	17.22	57.44	.18	.60	4.38	14.60	.....	.....	.....	.....
24.....	14.00	40.00	19.44	58.60	3.04	8.69	8.20	24.54	.....	.....	.....	.....
25.....	14.25	40.71	19.26	58.36	2.47	7.06	7.18	21.76	.....	.....	.....	.....
26.....	12.54	44.78	18.54	61.80	1.03	3.68	6.59	21.97	.....	.....	.....	.....
27.....	12.88	42.93	18.88	59.00	2.37	7.90	7.91	24.72	.....	.....	.....	.....
28.....	15.36	38.40	18.88	59.00	4.55	11.38	7.87	24.60	.....	.....	.....	.....
29.....	10.26	38.00	12.16	55.27	.....	.....	1.29	5.87	.....	.59	2.19	.....
30.....	14.06	43.93	20.50	58.57	3.31	10.34	9.29	26.55	.....	.....	.....	.....
31.....	11.87	45.65	18.39	61.90	.....	.....	5.81	19.37	.....	.09	.35	.....
32.....	11.72	41.86	16.80	58.00	1.57	5.61	6.22	20.74	.....	.....	.....	.....
33.....	15.71	37.75	19.30	55.11	2.19	5.48	5.96	17.00	.....	.....	.....	.....
34.....	13.65	42.65	20.22	61.27	2.29	7.15	8.40	25.46	.....	.....	.....	.....
35.....	12.08	40.26	17.78	59.26	.37	1.23	5.64	18.80	.....	.....	.....	.....
36.....	14.15	40.43	17.85	74.00	2.56	7.32	6.12	34.90	.....	.....	.....	.....
37.....	12.16	43.42	17.62	59.33	.....	.....	4.83	16.03	.....	.32	1.15	.....
38.....	9.78	43.30	18.15	65.80	.....	.....	.59	2.95	.....	2.47	12.35	.....
39.....	12.76	41.19	16.50	61.11	.....	.....	1.98	7.34	.....	1.42	4.55	.....
40.....	13.00	43.33	18.00	64.28	1.79	6.07	6.93	24.75	.....	.....	.....	.....
Total 40 acres....	529.68	1678.4	706.64	2365.2	79.32	233.91	236.11	783.70	9.25	37.49	.....	.....
Average one acre.	13.24	41.96	17.66	59.15	1.933	5.848	5.903	19.592	.231	.937	.....	.....

TABLE XVII.—SUMMARY OF TABLE XVI.

In the tables on this page have been summarized the results in the foregoing table. The tables show the total cost of producing 40 acres of barley and the average cost per acre and bushel, the total value of products of 40 acres and the average value per acre and bushel. In the analysis of expenses wages was allowed for team work as well as for labor.

(For a more complete analysis of expenses in this case, both when wages is allowed for team work and when horses or their value is treated as capital, see the next two pages.)

1. Cost of production.

Items.	40 acres.	One	Bush.	40 acres.	One	Bush.
	1896.	acre.		5 years.	acre.	
	\$	\$	Cts.	\$	\$	Cts.
Plowing	\$45.13	\$1.128	3.64	\$45.13	\$1.128	3.79
Harrowing and seeding	26.47	.662	2.14	26.47	.662	2.25
Cutting	10.69	.267	.86	10.69	.267	.90
Fertilizing	105.10	2.627	8.39	106.10	2.627	8.79
Seed	23.97	.599	1.93	37.39	.936	3.13
Shocking and stacking	29.05	.726	2.34	29.05	.726	2.44
Threshing	26.66	.667	2.10	25.26	.632	2.10
Marketing	21.83	.547	1.74	20.73	.518	1.74
Interest	125.97	3.149	10.28	125.97	3.149	10.62
Wear and tear	14.64	.366	1.21	14.64	.366	1.27
Taxes	10.10	.252	.81	10.10	.252	.85
Other expenses	20.00	.500	1.61	20.00	.500	1.68
Total	459.61	11.490	37.05	470.53	11.763	39.56

Value of products.

Value of grain	364.03	9.101	28.72	540.99	13.525	44.97
Value of straw	165.65	4.141	13.24	165.65	4.141	14.18
Total value	529.68	13.242	41.96	706.64	17.666	59.15

Profit and Loss.

Profit	79.32	1.983	58.48	236.11	5.903	19.59
Loss	9.25	.231	9.37	.....	.....	.....
Balance profit	70.07	1.752	49.11	236.11	5.903	19.59

TABLE XVIII.—COST OF PRODUCTION AND VALUE OF 40 ACRES OF BARLEY.

The data upon which the calculations in the tables on this page are based may also be found in tables 1, 2, 3. "Cost of Production" is shown in table 1. "Value of Products" is shown in table 2. Table 3 shows the surplus value or cost, as the case may be. In table 4 is presented the "Annual Investment" and the respective amounts of interest and necessary profit at 12 per cent. on same and upon the value of the machinery used, and also the "Surplus Value" above the sum of these expenses. It should be noticed that in this presentation wages has been allowed for team work in place of treating horses, or their value, as other capital.

1. Cost of production.

Items.	40 acres.	One acre.	One Bush.	
1 Plowing	185 hours at 23.5 cents	\$ 43.48	\$ 1.087	Cts. 3.61
2 Harrowing, etc.	72 hours at 23.5 cents	16.92	.423	1.40
3 Seeding	40 hours at 23.5 cents	9.40	.235	.78
4 Cutting	41 hours at 23.5 cents	9.64	.241	.80
5 Shocking	55 hours at 12.2 cents	6.71	.168	.55
6 Stacking, man and team.....	61 hours at 23.5 cents	14.34	.358	1.19
7 Stacking, extra help.....	61 hours at 12.2 cents	7.44	.186	.62
8 Threshing, labor	131 hours at 12.2 cents	15.98	.400	1.33
9 Threshing, machine	1205 bush. at 1 cent	12.05	.301	1.00
10 Marketing	80 hours at 23.5 cents	20.80	.520	1.73
11 Seed	88 bush. at 45 cents	39.60	.990	3.30
12 Taxes	40 acres at 25.3 cents	10.12	.253	.84
13 Fertilizing, clover and.....	86 loads of manure...	45.00	1.125	3.73
14 Other expenses	40 acres at 50 cents...	20.00	.500	1.66
15 Depreciation, machinery ..	146.80 dollars at 10 per cent.	14.68	.367	1.22
Annual investment		286.16	7.154	23.76
16 Interest, machinery	146.80 dollars at 6 per cent.	8.81	.220	.73
17 Interest, annual invest....	286.16 dollars at 6 per cent.	17.17	.429	1.42
18 Interest, land	1,780.00 dollars at 6 per cent.	106.80	2.670	8.86
Totals		418.94	10.473	34.77

Total investment, \$2,212.96. Average investment per acre, \$56.32. Team work, 47.9 days. Labor, 72.5 days. Value per acre of land, \$44.50.

2. Value of products.

1 1205 bushels barley at 45 cents, av. 5 years.....	642.25	13.556	45.00
2 40 acres straw, \$1.50	60.00	1.500	4.99
Total	602.25	15.056	49.99

3. Surplus Value.

Surplus value—profits	183.31	4.583	15.22
-----------------------------	--------	-------	-------

Equivalent to 9.24 per cent. on the capital invested.

Annual investment, interest and necessary profit at 12 per cent. on same and upon the value of machinery used; also the surplus value of products above the sum of these expenses. (This surplus capitalized at 12 per cent. and credited to the land gives the value of the land for raising barley.)

Annual investment	286.16	7.154	23.76
Machinery	17.62	.440	1.46
Annual investment	34.34	.869	2.85
Total expenses less rent.....	338.12	8.453	28.07
Surplus credited to land.....	*264.13	6.603	21.92
Total	602.25	15.056	49.99

*Capitalized at 12 per cent. equivalent to \$2,201.09 or \$55.02 per acre. This is \$10.52 per acre above the value reported by the farmers.

TABLE XIX.—COST OF PRODUCTION AND VALUE OF 40 ACRES OF BARLEY.

The data upon which the calculations in the table on this page are based may also be found in tables 1, 2, 3. "Cost of Production" is shown in table 1. "Value of Product" is shown in table 2. Table 3 shows the "Surplus Value" above cost. In table 4 is shown the "Annual Investment" and the respective amounts of interest and necessary profit at 12 per cent. on same and upon the value of the machinery and horses used, also the surplus value above the sum of these expenses. In this presentation horses, or their value, have been treated as other capital.

1. Cost of production.

Items.	40 acres.	One acre.	One Bush.
	\$	\$	Cts.
1 Plowing 185 hours at 12.2 cents	22.57	.564	1.87
2 Harrowing, etc. 72 hours at 12.2 cents	8.78	.219	.73
3 Seeding 40 hours at 12.2 cents	4.88	.122	.40
4 Cutting 41 hours at 12.2 cents	5.00	.125	.42
5 Shocking 55 hours at 12.2 cents	6.71	.168	.55
6 Stacking 122 hours at 12.2 cents	14.88	.372	1.23
7 Threshing, labor 131 hours at 12.2 cents	15.98	.400	1.33
8 Threshing, machine 1205 bush. at 1 cent	12.05	.301	1.00
9 Marketing 80 hours at 12.2 cents	9.76	.244	.81
10 Seed 88 bush. at 45 cents	39.60	.990	3.30
11 Taxes 40 acres at 25.3 cents	10.12	.253	.84
12 Maintenance, horses 40 acres at 80 cents	32.00	.800	2.65
13 Fertilizing, clover 86 loads.....	45.00	1.125	3.73
14 Other expenses 40 acres at 50 cents	20.00	.500	1.66
15 Depreciation, machinery 146.80 dollars at 10 per cent.	14.68	.367	1.22
16 Depreciation, horses, 52.80 dollars at 10 per cent.	5.28	.132	.44
Annual investment	267.29	6.682	22.18
17 Interest, machinery 146.80 dollars at 6 per cent.	8.81	.220	.73
18 Interest, horses 52.80 dollars at 6 per cent.	3.17	.079	.27
19 Interest, an. investment. 267.29 dollars at 6 per cent.	16.04	.401	1.33
20 Interest, land 1,780.00 dollars at 6 per cent.	106.80	2.670	8.86
Total	402.11	10.062	33.37

Total investment, \$2,246.89. Average investment per acre, \$56.17. Team work, 47.9 days. Labor, 72.6 days. Value per acre of land, \$44.50.

2. Value of products.

1 1205 bushels barley at 45 cents, av. 5 yrs.....	542.25	13.556	45.00
2 40 acres straw, \$1.50.....	60.00	1.500	4.99
Total	602.25	15.056	49.99

3. Surplus Value.

Surplus value—profits	200.14	5.004	16.62
-----------------------------	--------	-------	-------

Equivalent to 8.90 per cent. on capital invested.

Annual investment, interest and necessary profit at 12 per cent. on the same and upon the value of machinery and horses used; also the surplus value of products above the sum of these expenses. (This surplus capitalized at 12 per cent. and credited to the land gives the value of the land for raising barley.)

Annual investment	267.29	6.682	22.18
Machinery \$146.80 at 12 per cent.	17.62	.440	1.46
Horses 52.80 at 12 per cent.	6.34	.159	.54
Annual investment 267.29 at 12 per cent.	32.08	.802	2.66
Total expenses less rent.....	323.33*	8.083	26.84
Surplus credited to land.....	*278.92	6.973	23.15
	602.25	15.056	49.99

*Capitalized at 12 per cent. equivalent to \$2,324.35 or \$58.11 per acre. This is \$13.60 per acre above the value reported by the farmers.

In relation to the cost of producing 40 acres of barley as presented in the four preceding tables it is, perhaps, proper to repeat here a few facts to which attention has already been called.

In table XVI, covering six pages, the cost per each acre in detail, the total cost of 40 acres and the average cost per acre are presented. Table XVII is made up of the totals of table XVI. Table XVIII is a more complete analysis of table XVII, including besides the expenses of that table, interest on the value of the machinery used and upon the sum of the annual investments. These items of expenses were added because they are unavoidable in farming and constitute a proper charge against the products.

It should be noticed that in these three tables the expenses in farming arising from the use of horses for motor power was arrived at by allowing wages, at ruling rates in the respective localities, for team work. It appeared, however, that this is not the proper way in which to treat expenses of this nature. Work horses are usually regarded as capital invested. This being the case, expenses from this source are with a few exceptions similar to the expenses of other capital used and should, therefore, be treated accordingly. Another analysis of the cost of production was therefore made, in which the expenses arising from the horses used were treated from this point of view. This analysis is presented in table XIX and includes in the expenses, wages for man's labor only, while for horses, depreciation and interest on their value and actual yearly cost, per acre, of their maintenance was allowed as expense. This method of treating expenses of this kind does not greatly affect the total cost, but is undoubtedly proper, at least in most cases.

The average cost of growing one acre of wheat as computed from table XIX is shown below:

Items.	One acre.	
	\$	Cts.
Plowing .....	.564	1.87
Harrowing, etc. ....	.219	.73
Seeding .....	.122	.40
Cutting .....	.125	.42
Shocking .....	.168	.55
Stacking .....	.372	1.23
Threshing, labor .....	.400	1.33
Threshing, machine .....	.301	1.00
Marketing .....	.244	.81
Seed .....	.990	3.30
Taxes .....	.253	.84
Maintenance, horses .....	.800	2.65
Fertilizing	1.125	3.73
Other expenses .....	.500	1.66
Depreciation, machinery .....	.367	1.22
Depreciation, horses .....	.132	.44
Annual investment	6.682	22.18
Interest, machinery .....	.220	.73
Interest, horses .....	.079	.27
Interest, annual investment .....	.401	1.33
Interest, land	2.670	8.86
Total	10.052	33.37

CORN.—TABLE XX.

Cost of production and value of products of 40 acres of corn.

OFFICE No.	PLOWING.				HARROWING AND PLANTING.				CULTIVATING.			
	Cost per acre and bushel.				Cost per acre and bushel.				Cost per acre and bushel.			
	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years
	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.
1.....	1.00	2.50	1.00	2.70	.60	1.50	.60	1.62	1.25	3.13	1.25	3.38
2.....	1.40	3.50	1.40	3.78	1.13	2.83	1.13	3.06	2.00	5.00	2.00	5.40
3.....	1.00	1.67	1.00	1.85	.75	1.25	.75	1.39	1.25	2.08	1.25	2.32
4.....	.85	2.13	.85	2.24	1.22	3.05	1.22	3.21	1.12	2.80	1.12	2.95
5.....	1.00	2.22	1.00	2.70	.68	1.51	.68	1.84	1.65	3.07	1.65	4.46
6.....	.80	1.60	.80	1.78	.75	1.50	.75	1.66	.80	1.60	.80	1.78
7.....	1.00	2.50	1.00	2.50	.69	1.72	.69	1.72	2.10	5.26	2.10	5.26
8.....	1.00	2.50	1.00	2.50	.40	1.00	.40	1.00	1.60	4.00	1.60	4.00
9.....	.75	2.14	.75	2.14	.65	1.86	.65	1.86	1.00	2.86	1.00	2.86
10.....	1.60	4.00	1.60	4.00	.95	2.38	.95	2.38	.95	2.37	.95	2.37
11.....	1.35	3.37	1.35	3.37	.91	2.28	.91	2.28	1.44	3.60	1.44	3.60
12.....	1.00	2.00	1.00	2.22	.55	1.10	.55	1.22	1.20	2.40	1.20	2.67
13.....	1.50	4.41	1.50	4.54	.93	2.72	.93	2.94	1.50	4.41	1.50	4.54
14.....	1.16	2.90	1.16	3.42	1.00	2.50	1.00	2.94	1.72	4.30	1.72	5.06
15.....	1.00	2.23	1.00	2.23	.55	1.23	.55	1.23	1.16	2.58	1.16	2.58
16.....	2.00	5.00	2.00	5.00	1.22	3.05	1.22	3.35	1.30	3.25	1.30	3.25
17.....	1.00	2.00	1.00	2.50	.86	1.72	.86	2.15	1.00	2.00	1.00	2.50
18.....	1.00	2.86	1.00	3.13	.50	1.43	.50	1.56	1.00	2.85	1.00	3.12
19.....	1.25	2.50	1.25	3.12	1.00	2.00	1.00	2.50	1.25	2.50	1.25	3.13
20.....	1.00	2.22	1.00	2.50	.80	1.78	.80	2.00	1.60	3.66	1.60	4.00
21.....	1.20	3.00	1.20	3.16	.55	1.38	.55	1.45	1.50	3.75	1.50	3.94
22.....	1.24	2.95	1.24	3.03	.75	1.79	.75	1.83	1.63	3.88	1.63	3.98
23.....	1.37	2.74	1.37	3.26	1.38	2.76	1.38	3.29	2.25	4.50	2.25	5.36
24.....	1.20	2.66	1.20	2.85	1.00	2.22	1.00	2.37	2.40	5.33	2.40	5.72
25.....	1.00	2.00	1.00	2.22	.54	1.08	.54	1.20	1.60	3.20	1.60	3.56
26.....	1.00	2.22	1.00	2.38	.54	1.20	.54	1.30	2.00	4.45	2.00	4.77
27.....	1.13	2.82	1.13	2.69	.44	1.10	.44	1.04	1.40	3.50	1.40	3.33
28.....	1.00	2.50	1.00	2.64	1.25	3.18	1.25	3.29	2.50	6.25	2.50	6.57
29.....	1.00	3.33	1.00	3.33	.75	2.50	.75	2.50	2.00	6.67	2.00	6.67
30.....	1.00	2.00	1.00	2.23	.95	1.90	.95	2.09	.94	1.88	.94	2.08
31.....	1.25	2.23	1.25	2.78	.63	1.13	.63	1.41	1.34	2.39	1.34	2.98
32.....	1.00	2.00	1.00	2.38	.90	1.80	.90	2.13	1.20	2.40	1.20	2.86
33.....	1.50	3.00	1.50	3.57	.90	1.80	.90	2.14	2.40	4.80	2.40	5.72
34.....	1.25	3.12	1.25	3.57	.58	1.45	.58	1.65	2.13	5.32	2.13	6.09
35.....	1.00	2.50	1.00	2.64	.60	1.50	.60	1.58	1.60	4.00	1.60	4.21
36.....	.84	2.21	.84	2.54	.59	1.55	.59	1.78	1.37	3.61	1.37	4.15
37.....	1.13	2.82	1.13	2.97	.71	1.77	.71	1.86	2.25	5.63	2.25	5.92
38.....	1.25	2.50	1.25	2.72	1.38	2.76	1.38	3.01	1.40	3.80	1.40	3.05
39.....	1.25	2.50	1.25	3.13	.81	1.62	.81	2.03	2.52	5.04	2.52	6.30
40.....	.86	1.72	.86	2.15	.54	1.08	.54	1.35	1.00	2.00	1.00	2.50
Total 40 acres....	45.13	105.07	45.13	114.46	31.93	73.93	31.93	80.81	62.32	145.62	62.32	158.99
Average one acre.	1.128	2.627	1.128	2.861	.798	1.848	.798	2.020	1.558	3.640	1.558	3.975

CORN.—TABLE XX, continued.

Cost of production and value of products of 40 acres of corn.

OFFICE NO.	CUTTING.				HUSKING.				SHELLING.			
	Cost per acre and bushel.				Cost per acre and bushel.				Cost per acre and bushel.			
	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years
	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.
1.....	1.00	2.50	1.00	2.70	1.20	3.00	1.11	3.00	.40	1.00	.37	1.00
2.....	.75	1.87	.75	2.03	1.20	3.00	1.11	3.00	.40	1.00	.37	1.00
3.....	.30	.50	.30	.55	1.80	3.00	1.62	3.00	.60	1.00	.54	1.00
4.....	.50	1.25	.50	1.32	1.20	3.00	1.14	3.00	.40	1.00	.38	1.00
5.....	1.00	2.22	1.00	2.70	1.35	3.00	1.11	3.00	.45	1.00	.37	1.00
6.....	.80	1.60	.80	1.78	1.50	3.00	1.35	3.00	.50	1.00	.45	1.00
7.....	.40	1.00	.40	1.00	1.20	3.00	1.20	3.00	.40	1.00	.40	1.00
8.....	.75	1.88	.75	1.88	1.20	3.00	1.20	3.00	.40	1.00	.40	1.00
9.....	.50	1.43	.50	1.43	1.05	3.00	1.05	3.00	.35	1.00	.35	1.00
10.....	.60	1.50	.60	1.50	1.20	3.00	1.20	3.00	.40	1.00	.40	1.00
11.....	1.20	3.00	1.20	3.00	1.20	3.00	1.20	3.00	.80	2.00	.80	2.00
12.....	.50	1.00	.50	1.11	1.50	3.00	1.35	3.00	.50	1.00	.45	1.00
13.....	.60	1.76	.60	1.82	1.02	3.00	.99	3.00	.68	2.00	.66	2.00
14.....	.50	1.25	.50	1.48	1.20	3.00	1.02	3.00	.40	1.00	.34	1.00
15.....	.84	1.86	.84	1.86	1.35	3.00	1.35	3.00	.45	1.00	.45	1.00
16.....	1.00	2.50	1.00	2.50	1.20	3.00	1.20	3.00	.40	1.00	.40	1.00
17.....	.66	1.32	.66	1.65	1.50	3.00	1.20	3.00	.50	1.00	.40	1.00
18.....	.66	1.89	.66	2.06	1.05	3.00	.96	3.00	.35	1.00	.32	1.00
19.....	.50	1.00	.50	1.25	1.00	2.00	.80	2.00	.50	1.00	.40	1.00
20.....	1.00	2.22	1.00	2.50	1.35	3.00	1.20	3.00	1.35	3.00	1.20	3.00
21.....	.87	2.17	.87	2.29	.60	1.50	.57	1.50	.60	1.50	.57	1.50
22.....	1.20	2.86	1.20	2.93	.84	2.00	.82	2.00	1.26	3.00	1.23	3.00
23.....	1.00	2.00	1.00	2.38	2.00	4.00	1.68	4.00	.75	1.50	.63	1.50
24.....	1.00	2.23	1.00	2.38	1.13	2.51	1.05	2.50	1.12	2.49	1.05	2.50
25.....	.85	1.70	.85	1.89	1.50	3.00	1.35	3.00	1.50	3.00	1.35	3.00
26.....	1.25	2.78	1.25	2.98	1.58	3.51	1.47	3.50	1.58	3.51	1.47	3.50
27.....	.78	1.95	.78	1.85	1.20	3.00	1.20	2.86	.40	1.00	.40	.96
28.....	.85	2.12	.85	2.24	1.20	3.00	1.14	3.00	.20	.50	.19	.50
29.....	1.00	3.33	1.00	3.33	.90	3.00	.90	3.00	.60	2.00	.60	2.00
30.....	1.00	2.00	1.00	2.23	1.50	3.00	1.35	3.00	.50	1.00	.45	1.00
31.....	1.00	1.79	1.00	2.22	1.12	2.00	.90	2.00	1.68	3.00	1.35	3.00
32.....	.75	1.50	.75	1.78	1.00	2.00	.84	2.00	1.25	2.50	1.05	2.50
33.....	1.05	2.10	1.05	2.50	2.00	4.00	1.68	4.00	1.50	3.00	1.26	3.00
34.....	.90	2.25	.90	2.57	1.20	3.00	1.05	3.00	1.00	2.50	.85	2.44
35.....	1.25	3.12	1.25	3.29	.80	2.00	.76	2.00	1.20	3.00	1.14	3.00
36.....	.28	.74	.28	.85	1.04	2.74	.99	3.00	1.04	2.74	.99	3.00
37.....	.50	1.25	.50	1.32	1.00	2.50	.85	2.24	.80	2.00	.76	2.00
38.....	1.00	2.00	1.00	2.18	1.50	3.00	1.38	3.00	1.00	2.00	.92	2.00
39.....	.88	1.76	.88	2.20	1.50	3.00	1.20	3.00	.75	1.50	.60	1.50
40.....	.60	1.20	.60	1.50	1.50	3.00	1.20	3.00	1.50	3.00	1.20	3.00
Total 40 acres....	32.07	74.40	32.07	81.03	50.38	114.76	45.74	114.60	30.46	68.74	27.51	68.90
Average one acre.	.802	1.860	.802	2.026	1.259	2.869	1.143	2.865	.761	1.718	.688	1.722

CORN.—TABLE XX, continued.

Cost of production and value of products of 40 acres of corn.

OFFICE NO.	MARKETING.				FERTILIZING.				INTEREST.			
	Cost per acre and bushel.				Cost per acre and bushel.				Cost per acre and bushel.			
	Acres 1896 \$	Bush 1896 Cts.	Acres 5 years \$	Bush 5 years Cts.	Acres 1896 \$	Bush 1896 Cts.	Acres 5 years \$	Bush 5 years Cts.	Acres 1896 \$	Bush 1896 Cts.	Acres 5 years \$	Bush 5 years Cts.
1.....	.40	1.00	.37	1.00	4.00	10.00	4.00	10.81	3.60	9.00	3.60	9.73
2.....	.30	.75	.27	.75	3.40	8.50	3.40	9.19	3.72	9.30	3.72	10.06
3.....	.60	1.00	.54	1.00	4.00	6.66	4.00	7.40	3.84	6.40	3.84	7.12
4.....	1.20	3.00	1.14	3.00	3.20	8.00	3.20	8.43	1.80	4.50	1.80	4.74
5.....	.90	2.00	.74	2.00	4.00	8.39	4.00	10.32	2.70	6.00	2.70	7.29
6.....	2.50	5.00	2.25	5.00	4.30	8.60	4.30	9.55	1.50	3.00	1.50	3.34
7.....	1.20	3.00	1.20	3.00	3.00	7.50	3.00	7.50	3.00	7.50	3.00	7.50
8.....	.40	1.00	.40	1.00	4.00	10.00	4.00	10.00	3.60	9.00	3.60	9.00
9.....	1.75	5.00	1.75	5.00	4.00	11.42	4.00	11.42	1.50	4.29	1.50	4.29
10.....	.80	2.00	.80	2.00	4.20	10.50	4.20	10.50	1.80	4.50	1.80	4.50
11.....	1.60	4.00	1.60	4.00	3.40	8.50	3.40	8.50	2.40	6.00	2.40	6.00
12.....	1.25	2.50	1.12	2.49	3.30	6.60	3.30	7.34	3.00	6.00	3.00	6.66
13.....	.68	2.00	.66	2.00	3.40	10.00	3.40	10.30	4.80	14.11	4.80	14.55
14.....	.80	2.00	.68	2.00	3.00	7.50	3.00	8.32	4.20	10.60	4.20	12.32
15.....	1.35	3.00	1.35	3.00	3.50	7.77	3.50	7.77	4.38	9.73	4.38	9.73
16.....	.80	2.00	.80	2.00	3.20	8.00	3.20	8.00	2.70	6.75	2.70	6.75
17.....	1.50	3.00	1.20	3.00	4.30	8.60	4.30	10.75	1.50	3.00	1.50	3.75
18.....	.60	2.00	.64	2.00	3.50	10.00	3.50	10.94	1.20	3.43	1.20	3.75
19.....	.50	1.00	.40	1.00	3.30	6.60	3.30	8.25	3.48	6.96	3.48	8.70
20.....	.45	1.00	.40	1.00	3.40	7.55	3.40	8.50	1.08	2.40	1.08	2.70
21.....	.40	1.00	.38	1.00	3.40	8.50	3.40	8.96	3.00	7.50	3.00	7.89
22.....	1.05	2.50	1.02	2.44	4.00	9.53	4.00	9.76	3.00	7.14	3.00	7.32
23.....	1.00	2.00	1.00	2.38	3.50	7.00	3.50	8.33	4.50	9.00	4.50	10.72
24.....	.68	1.51	.63	1.50	3.35	7.44	3.35	7.98	2.40	5.33	2.40	5.72
25.....	.50	1.00	.45	1.00	3.30	6.60	3.30	7.33	3.90	7.80	3.90	8.66
26.....	.90	2.00	.84	2.00	3.50	7.78	3.50	8.34	3.42	7.60	3.42	8.14
27.....	.40	1.00	.40	.96	4.20	10.50	4.20	10.00	2.70	6.75	2.70	6.43
28.....	.20	.50	.19	.50	3.20	8.00	3.20	8.42	3.60	9.00	3.60	9.48
29.....	.60	2.00	.60	2.00	3.00	10.00	3.00	10.00	3.18	10.60	3.18	10.60
30.....	.50	1.00	.45	1.00	5.50	11.00	5.50	12.23	3.60	7.20	3.60	8.00
31.....	.56	1.00	.45	1.00	3.60	6.43	3.60	8.00	4.50	8.03	4.50	10.00
32.....	1.25	2.50	1.05	2.50	3.30	6.60	3.30	7.86	1.80	3.60	1.80	4.29
33.....	.50	1.00	.42	1.00	3.50	7.00	3.50	8.33	3.30	6.60	3.30	7.33
34.....	1.20	3.00	1.05	3.00	3.50	8.75	3.50	10.00	3.12	7.80	3.12	8.91
35.....	.80	2.00	.76	2.00	3.20	8.00	3.20	8.42	3.90	9.75	3.90	10.26
36.....	.76	2.00	.66	2.00	3.00	7.89	3.00	9.09	3.75	9.66	3.75	11.37
37.....	.40	1.00	.38	1.00	3.50	8.75	3.50	9.22	3.96	9.90	3.96	10.42
38.....	2.00	4.00	1.84	4.00	3.30	6.60	3.30	7.18	3.60	7.20	3.60	7.33
39.....	1.00	2.00	.80	2.00	3.25	6.50	3.25	8.13	5.70	11.40	5.70	14.23
40.....	1.50	3.00	1.20	3.00	3.40	6.80	3.40	8.50	3.24	6.48	3.24	8.10
Total 40 acres....	35.88	82.26	32.88	82.52	142.90	330.86	142.90	360.87	125.97	290.91	125.97	318.71
Average one acre.	.899	2.056	.822	2.063	3.572	8.271	3.572	9.022	3.149	7.273	3.149	7.968

CORN.—TABLE XX, continued.

Cost of production and value of products of 40 acres of corn.

OFFICE NO.	WEAR AND TEAR.				TAXES.				OTHER EXPENSES.			
	Cost per acre and bushel.				Cost per acre and bushel.				Cost per acre and bushel.			
	Acre 1896 \$	Bush 1896 Cts.	Acre 5 years \$	Bush 4 years Cts.	Acre 1896 \$	Bush 1896 Cts.	Acre 5 years \$	Bush 5 years Cts.	Acre 1896 \$	Bush 1896 Cts.	Acre 5 years \$	Bush 5 years Cts.
1.....	.60	1.50	.60	1.62	.25	.62	.25	.68	.50	1.25	.50	1.35
2.....	.60	1.50	.60	1.62	.25	.62	.25	.67	.50	1.25	.50	1.35
3.....	.25	.42	.25	.46	.25	.42	.25	.46	.50	.83	.50	.93
4.....	.34	.85	.34	.89	.25	.62	.25	.65	.50	1.25	.50	1.31
5.....	.33	.74	.33	.89	.25	.55	.25	.68	.50	1.11	.50	1.35
6.....	.33	.66	.33	.74	.25	.50	.25	.55	.50	1.00	.50	1.11
7.....	.25	.62	.25	.62	.25	.62	.25	.62	.50	1.25	.50	1.25
8.....	.30	.75	.30	.75	.25	.62	.25	.62	.50	1.25	.50	1.25
9.....	.17	.49	.17	.49	.25	.71	.25	.71	.50	1.42	.50	1.42
10.....	.15	.38	.15	.38	.25	.62	.25	.62	.50	1.25	.50	1.25
11.....	.33	.83	.33	.83	.25	.62	.25	.62	.50	1.25	.50	1.25
12.....	.40	.80	.40	.89	.25	.50	.25	.55	.50	1.00	.50	1.11
13.....	.20	.58	.20	.60	.25	.74	.25	.75	.50	1.49	.50	1.51
14.....	.50	1.25	.50	1.48	.30	.75	.30	.88	.50	1.42	.50	1.48
15.....	.58	1.29	.58	1.29	.30	.66	.30	.66	.50	1.11	.50	1.11
16.....	.47	1.18	.47	1.18	.25	.62	.25	.62	.50	1.25	.50	1.25
17.....	.25	.50	.25	.63	.25	.50	.25	.62	.50	1.00	.50	1.25
18.....	.26	.74	.26	.81	.25	.71	.25	.78	.50	1.43	.50	1.57
19.....	.60	1.20	.60	1.50	.25	.50	.25	.62	.50	1.00	.50	1.25
20.....	.22	.49	.22	.55	.25	.55	.25	.62	.50	1.11	.50	1.25
21.....	.33	.83	.33	.87	.25	.62	.25	.65	.50	1.25	.50	1.31
22.....	.23	.54	.23	.57	.25	.59	.25	.62	.50	1.19	.50	1.22
23.....	.50	1.00	.50	1.19	.25	.50	.25	.59	.50	1.00	.50	1.19
24.....	.33	.85	.33	.91	.25	.56	.25	.59	.50	1.11	.50	1.19
25.....	.40	.80	.40	.89	.25	.50	.25	.56	.50	1.00	.50	1.11
26.....	.27	.60	.27	.64	.25	.55	.25	.59	.50	1.11	.50	1.19
27.....	.16	.40	.16	.38	.25	.63	.25	.59	.50	1.25	.50	1.19
28.....	.17	.43	.17	.45	.25	.62	.25	.65	.50	1.25	.50	1.31
29.....	.35	1.17	.35	1.17	.25	.83	.25	.83	.50	1.67	.50	1.67
30.....	.13	.26	.13	.29	.25	.50	.25	.56	.50	1.00	.50	1.11
31.....	.07	.13	.07	.15	.25	.44	.25	.55	.50	.89	.50	1.11
32.....	.24	.48	.24	.58	.25	.58	.25	.59	.50	1.00	.50	1.19
33.....	.42	.84	.42	1.00	.25	.50	.25	.59	.50	1.00	.50	1.19
34.....	.49	1.23	.49	1.40	.25	.63	.25	.71	.50	1.25	.50	1.43
35.....	.22	.55	.22	.57	.25	.63	.25	.66	.50	1.25	.50	1.32
36.....	.50	1.32	.50	1.52	.25	.65	.25	.76	.50	1.32	.50	1.51
37.....	.75	1.88	.75	1.97	.25	.62	.25	.66	.50	1.25	.50	1.31
38.....	1.00	2.00	1.00	2.18	.25	.50	.25	.54	.50	1.00	.50	1.09
39.....	.80	1.60	.80	2.00	.25	.50	.25	.63	.50	1.00	.50	1.25
40.....	.12	.24	.12	.30	.25	.50	.25	.63	.50	1.00	.50	1.24
Total 40 acres....	14.66	33.92	14.66	37.25	10.10	23.10	10.10	25.53	20.00	46.54	20.00	50.73
Average one acre.	.366	.848	.366	.931	.25	.587	.25	.638	.50	1.163	.50	1.268

CORN.—TABLE XX, continued.

Cost of production and value of products of 40 acres of corn.

OFFICE No.	TOTAL COST OF RAISING PRODUCT.				VALUE OF STALK.				VALUE OF CORN.			
	Total cost per acre and bushel.				Value per acre and bushel.				Value per acre and bushel.			
	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years
\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	\$	\$	\$	
1.....	14.80	37.00	14.65	39.59	6.06	15.15	6.06	16.33	9.20	.23	13.32	.36
2.....	15.66	39.12	15.50	41.91	6.08	15.20	6.08	16.32	9.20	.23	13.69	.37
3.....	15.14	25.23	14.84	27.48	7.80	13.00	7.80	14.44	15.00	.25	11.90	.35
4.....	12.68	31.45	12.44	32.74	6.80	17.00	6.80	17.89	10.00	.25	13.30	.35
5.....	14.81	32.91	14.33	38.73	6.40	14.22	6.40	17.29	11.25	.25	12.95	.35
6.....	14.53	29.06	14.08	31.29	7.65	15.30	7.65	17.00	12.50	.25	15.75	.35
7.....	13.99	34.97	13.99	34.97	6.40	16.00	6.40	16.03	10.00	.25	14.00	.35
8.....	14.40	36.00	14.40	36.00	6.00	15.00	6.00	15.00	10.00	.25	14.00	.35
9.....	12.47	35.52	12.47	35.62	5.92	16.91	5.92	16.91	10.50	.30	12.95	.37
10.....	13.40	33.50	13.40	33.50	6.00	15.00	6.00	15.00	11.20	.28	14.00	.35
11.....	15.38	38.45	15.38	38.45	5.60	14.00	5.60	14.00	10.00	.25	12.00	.30
12.....	13.95	27.90	13.62	30.26	6.75	13.50	6.75	15.00	13.00	.26	16.65	.37
13.....	16.06	47.22	15.99	48.46	6.00	17.65	6.00	18.18	7.82	.23	11.88	.36
14.....	15.28	38.20	14.92	43.88	5.44	13.60	5.44	16.03	8.80	.22	12.24	.36
15.....	15.96	35.46	15.96	35.46	6.20	13.77	6.20	13.77	9.90	.22	16.20	.36
16.....	15.04	37.60	15.04	37.60	6.00	15.00	6.00	15.00	10.00	.25	13.20	.33
17.....	13.82	27.64	13.12	32.80	6.00	12.00	6.00	15.00	11.00	.22	14.00	.36
18.....	10.97	31.34	10.79	33.72	5.00	14.28	5.00	16.62	8.05	.23	10.88	.34
19.....	14.13	28.26	13.73	34.32	5.80	16.00	5.80	14.50	11.50	.23	12.80	.32
20.....	13.00	28.88	12.65	31.62	6.00	13.33	6.00	15.00	11.10	.26	14.80	.37
21.....	13.20	33.00	13.12	34.52	5.70	14.25	5.70	15.00	10.40	.26	13.30	.35
22.....	15.95	37.97	15.87	38.70	6.00	14.28	6.00	14.63	10.50	.25	14.76	.36
23.....	19.00	38.00	18.56	44.19	7.00	14.00	7.00	16.66	11.50	.23	15.12	.35
24.....	15.41	34.24	15.21	36.21	6.00	13.33	6.00	14.28	11.70	.26	14.70	.36
25.....	15.84	31.68	15.49	34.42	6.75	13.50	6.75	15.00	12.00	.24	16.65	.37
26.....	16.79	37.31	16.51	39.33	6.40	14.22	6.40	15.23	11.25	.25	15.12	.36
27.....	13.66	33.90	13.56	32.28	6.72	16.80	6.72	16.00	10.40	.26	15.12	.36
28.....	14.92	37.30	14.84	39.05	6.00	15.00	6.00	15.79	10.40	.26	14.06	.37
29.....	14.13	47.10	14.13	47.10	4.80	16.00	4.80	16.03	7.80	.26	10.50	.35
30.....	16.37	32.74	16.12	35.82	7.20	14.40	7.20	16.00	12.50	.25	15.75	.36
31.....	16.50	29.46	15.84	35.20	6.00	10.71	6.00	13.33	13.44	.24	16.20	.36
32.....	13.44	26.96	12.88	30.66	6.80	13.60	6.80	16.19	12.50	.25	15.12	.36
33.....	17.82	35.64	17.18	40.90	6.90	13.80	6.90	16.43	11.00	.22	15.12	.36
34.....	16.12	40.30	15.67	44.77	6.95	17.37	6.95	19.85	9.60	.24	12.60	.36
35.....	15.32	38.30	15.18	39.95	6.20	15.60	6.20	16.31	10.00	.26	14.06	.37
36.....	13.92	36.63	13.72	41.57	4.80	12.63	4.80	14.54	9.50	.26	11.88	.36
37.....	15.75	39.37	15.54	40.89	6.40	16.00	6.40	16.84	11.20	.28	12.92	.34
38.....	18.18	36.36	17.82	38.78	6.06	12.12	6.06	13.17	12.50	.25	16.56	.36
39.....	19.21	38.42	18.56	46.40	6.40	12.80	6.40	16.00	12.50	.25	14.40	.36
40.....	15.01	30.02	14.11	35.27	6.30	12.60	6.30	15.75	12.50	.25	14.40	.36
Total 40 acres.	601.80	1390.5	591.21	1494.4	249.28	578.82	249.28	627.30	433.81	991.00	558.85	14.18
Average one acre.	12.045	34.763	14.780	37.360	6.232	14.47	6.232	15.68	10.845	.2477	13.971	.354

CORN.—TABLE XX, continued.

Cost of production and value of products of 40 acres of corn.

OFFICE NO.	TOTAL VALUE OF PRODUCT.				PROFIT.				LOSS.			
	Total value per acre and bushel.				Profit per acre and bushel.				Loss per acre and bushel.			
	Acre 1896 \$	Bush 1896 Cts.	Acre 5 years \$	Bush 5 years Cts.	Acre 1896 \$	Bush 1896 Cts.	Acre 5 years \$	Bush 5 years Cts.	Acre 1896 \$	Bush 1896 Cts.	Acre 5 years \$	Bush 5 years Cts.
1.....	15.26	38.15	19.38	52.38	.46	1.15	4.73	12.79				
2.....	15.28	38.20	19.77	53.32			4.27	11.41	.37	.92		
3.....	22.80	38.00	19.70	49.44	7.66	12.77	4.86	21.96				
4.....	16.80	42.00	18.87	52.85	4.22	10.55	7.66	20.15				
5.....	17.65	39.22	19.35	52.29	2.84	6.31	5.02	13.56				
6.....	20.15	40.30	23.40	52.00	5.62	11.24	9.32	20.71				
7.....	16.40	41.00	20.40	51.00	2.41	6.03	6.41	16.03				
8.....	16.00	40.00	20.00	50.00	1.60	4.00	5.60	14.00				
9.....	16.42	46.91	18.87	53.91	3.95	11.29	6.40	18.29				
10.....	17.20	43.00	20.00	50.00	3.80	9.50	6.60	16.50				
11.....	15.60	39.00	17.60	44.00	.22	.55	2.22	5.55				
12.....	19.75	39.50	23.40	52.00	5.80	11.60	9.78	21.74				
13.....	13.82	40.65	17.88	54.18			1.89	5.73	2.24	6.57		
14.....	14.24	35.60	17.68	52.00			2.76	8.12	1.04	2.60		
15.....	16.10	35.77	22.40	49.77	.14	.31	6.44	14.31				
16.....	16.00	40.00	19.20	48.00	.96	2.40	4.16	10.40				
17.....	17.00	34.00	20.00	50.00	3.18	6.36	6.88	17.20				
18.....	13.05	37.28	15.88	49.62	2.08	5.94	5.09	15.90				
19.....	17.30	39.00	18.60	46.50	3.17	10.74	4.87	12.18				
20.....	17.70	39.33	20.80	52.00	4.70	10.45	8.15	20.38				
21.....	16.10	40.25	19.00	50.00	2.90	7.25	5.88	15.48				
22.....	16.50	39.28	20.76	50.63	.55	1.31	4.89	11.93				
23.....	18.50	37.00	22.12	52.66			3.56	8.47	.50	1.00		
24.....	17.70	39.33	20.70	49.28	2.29	5.09	5.49	13.07				
25.....	18.75	37.60	23.40	52.00	2.91	6.82	7.91	17.58				
26.....	17.65	39.22	21.52	51.23	.86	1.91	5.01	11.90				
27.....	17.12	42.80	21.84	52.00	3.56	8.90	8.28	19.72				
28.....	16.40	41.00	20.06	52.79	1.48	3.70	5.22	13.74				
29.....	12.60	42.00	15.30	51.00			1.17	3.90	1.53	5.10		
30.....	19.70	39.40	22.95	51.00	3.33	6.66	6.83	16.18				
31.....	19.44	34.71	22.20	49.33	2.94	5.25	6.36	14.12				
32.....	19.30	38.60	21.92	52.19	5.86	11.64	9.04	21.53				
33.....	17.90	35.80	22.02	52.43	.08	.16	4.84	11.53				
34.....	16.55	41.37	19.55	55.85	.43	1.07	3.88	11.08				
35.....	16.20	40.50	20.26	53.31	.88	2.20	5.08	13.36				
36.....	14.30	37.63	16.68	50.54	.38	1.00	2.96	8.97				
37.....	17.60	44.00	19.32	50.84	1.85	4.63	3.78	9.95				
38.....	13.56	37.12	22.62	49.17	.38	.76	4.80	10.39				
39.....	13.90	37.80	20.80	52.00			2.24	5.60	.31	.62		
40.....	18.30	37.60	20.70	51.75	3.79	7.58	6.59	16.48				
Total 40 acres.	683.09	1569.8	808.13	2045.3	87.28	196.12	216.92	550.90	5.99	16.81		
Average one acre.	17.077	39.244	20.203	51.13	2.182	4.903	5.423	13.771	.149	.420		

TABLE XXI.—SUMMARY OF TABLE XX.

In the tables on this page have been summarized the results in the foregoing table. The tables show the total cost of producing 40 acres of corn and the average cost per acre and bushel, the total value of products of 40 acres and the average value per acre and bushel. In the analysis of expenses, wages was allowed for team work as well as for labor.

(For a complete analysis of expenses in this case, both when wages is allowed for team work and when horses or their value is treated as capital, see the next two pages.)

Cost of production.

Items.	40 acres.	One	Bush.	40 acres.	One	Bush.
	1896.	acre.		5 years	acre.	
	\$	\$	Cts.	\$	\$	Cts.
Plowing	45.13	1.128	2.63	45.13	1.128	2.86
Harrowing	31.93	.798	1.85	31.93	.798	2.02
Cultivating	62.32	1.558	3.64	62.32	1.558	3.97
Cutting	32.07	.802	1.86	32.07	.802	2.03
Husking	50.38	1.259	2.87	45.74	1.143	2.87
Shelling	30.46	.762	1.72	27.51	.689	1.72
Marketing	35.88	.899	2.06	32.88	.823	2.06
Fertilizing	142.90	3.572	8.27	142.90	3.572	9.02
Interest	125.97	3.149	7.27	125.97	3.149	7.97
Wear and tear	14.66	.366	.85	14.66	.366	.93
Taxes	10.10	.252	.59	10.10	.252	.64
Other expenses	20.00	.500	1.16	20.00	.500	1.27
Total	601.80	15.045	34.77	591.21	14.780	37.96

Value of products.

Value of grain	433.81	10.85	2.477	558.85	1.397	35.45
Value of straw	249.28	6.23	1.447	249.28	.623	15.98
Total value	683.09	17.08	3.924	808.13	2.020	51.13

Profit and Loss.

Profit	87.28	2.182	4.905	216.92	5.423	13.77
Loss	5.99	.149	.420	.....	.....	.....
Balance profit	81.29	2.033	4.483	216.92	5.423	13.77

TABLE XXII.—COST OF PRODUCTION AND VALUE OF 40 ACRES OF CORN.

The data upon which the calculations in the tables on this page are based may also be found in tables 1, 2, 3. "Cost of Production" is shown in table 1. "Value of Products" is shown in table 2. Table 3 shows the surplus value or cost, as the case may be. In table 4 is presented the "Annual Investment" and the respective amounts of interest and necessary profit at 12 per cent. on same and upon the value of the machinery used, and also the "Surplus Value" above the sum of these expenses. It should be noticed that in this presentation wages has been allowed for team work in place of treating horses, or their value, as other capital.

1. Cost of production.

Items.	40 acres.	One acre.	Bush.
	\$	\$	Cts.
1 Plowing 185 hours at 23.5 cents	43.48	1.087	2.72
2 Harrowing, etc. 89 hours at 23.5 cents	20.92	.523	1.31
3 Planting 53 hours at 23.5 cents	12.46	.311	.78
4 Cultivating 274 hours at 23.5 cents	64.39	1.610	4.03
5 Cutting, man and team 72 hours at 23.5 cents	16.92	.423	1.06
6 Cutting, extra man 72 hours at 12.2 cents	8.78	.219	.55
7 Husking 388 hours at 12.2 cents	47.37	1.184	2.97
8 Shelling 1596 bush. at 1.3 cents	20.74	.520	1.30
9 Marketing 139 hours at 23.5 cents	32.67	.817	2.05
10 Seed 7.5 bush. at 40 cents	3.00	.075	.19
11 Fertilizing, clover and 86 loads manure.....	50.00	1.250	3.13
12 Taxes 40 acres at 25.3 cents	10.12	.253	.64
13 Other expenses 40 acres at 50 cents	20.00	.500	1.26
14 Depreciation, machinery .146.80 dollars at 10 per cent.	14.68	.367	.91
Annual investment	365.53	9.138	22.90
15 Interest, machinery, 146.80 dollars at 6 per cent.	8.81	.220	.55
16 Interest, an. investment. 365.53 dollars at 6 per cent.	21.93	.548	1.37
17 Interest, land 1,780.00 dollars at 6 per cent.	106.80	2.670	6.69
Total	503.07	12.576	31.51

Total investment, \$2,292.33. Average investment per acre, \$57.30. Team work, 81.2 days. Labor, 127.2 days. Value per acre of land, \$44.50.

2. Value of products.

1 1596 bushels of corn at 35.4 cents, av. 6 yrs.....	564.98	14.124	35.40
2 40 acres of stalks, \$3.25.....	130.00	3.250	8.14
Total	694.98	17.374	43.54

3. Surplus Value.

1 Surplus value—profit	191.91	4.798	12.03
------------------------------	--------	-------	-------

Equivalent to 8.37 per cent. on capital invested.

Annual investment, interest and necessary profit at 12 per cent. on same and upon the value of machinery used; also the surplus value of products above the sum of these expenses. (This surplus capitalized at 12 per cent. and credited to the land gives the value for the land for raising corn.)

Annual investment	365.53	9.138	22.90
Machinery \$146.80 at 12 per cent.	17.62	.440	1.10
Annual investment 365.53 at 12 per cent.	43.86	1.097	2.75
Total expenses less rent.....	427.01	10.675	26.75
Surplus credited to land.....	*267.97	6.699	16.79
	694.98	17.374	43.54

*Capitalized at 12 per cent. equivalent to \$2,233.08 or \$55.82 per acre. This is \$11.32 per acre above the value reported by the farmers.

TABLE XXIII.—COST OF PRODUCTION AND VALUE OF 40 ACRES OF CORN.

The data upon which the calculations in the table on this page are based may also be found in tables 1, 2, 3. "Cost of Production" is shown in table 1. "Value of Product" is shown in table 2. Table 3 shows the "Surplus Value" above cost. In table 4 is shown the "Annual Investment" and the respective amounts of interest and necessary profit at 12 per cent. on same and upon the value of the machinery and horses used, also the surplus value of these expenses. In this presentation horses, or their value, have been treated as other capital.

1. *Cost of production.*

Items.	40 acres.	One acre.	Bush.
	\$	\$	Cts.
1 Plowing 185 hours at 12.2 cents	22.57	.564	1.41
2 Harrowing, etc. 89 hours at 12.2 cents	10.86	.272	.68
3 Planting 53 hours at 12.2 cents	6.47	.162	.40
4 Cultivating 274 hours at 12.2 cents	33.43	.836	2.09
5 Cutting, man and team 72 hours at 12.2 cents	8.74	.218	.55
6 Cutting, extra man 72 hours at 12.2 cents	8.74	.218	.55
7 Husking 388 hours at 12.2 cents	47.34	1.184	2.97
8 Shelling 1596 bush. at 1.3 cents	20.74	.518	1.30
9 Marketing 139 hours at 12.2 cents	16.96	.424	1.06
10 Seed 7.5 bush. at 40 cents	3.00	.075	.19
11 Taxes 40 acres at 25.3 cents	10.12	.253	.64
12 Maintenance horses 40 acres at 80 cents	32.00	.800	2.01
13 Fertilizing, clover and 86 loads manure.....	50.00	1.250	3.13
14 Other expenses 40 acres at 50 cents	20.00	.500	1.26
15 Depreciation, machinery .. 146.80 dollars at 10 per cent.	14.68	.367	.91
16 Depreciation, horses 52.80 dollars at 10 per cent.	5.28	.132	.33
Annual investment	310.93	7.773	19.48
17 Interest, machinery 146.80 dollars at 6 per cent.	8.81	.220	.55
18 Interest, horses 52.80 dollars at 6 per cent.	3.17	.079	.20
19 Interest, an. investment.. 310.93 dollars at 6 per cent.	18.66	.461	1.17
20 Interest, land 1,780.00 dollars at 6 per cent.	106.80	2.700	6.69
Total	448.37	11.209	28.09

Total investment, \$2,290.53. Average investment per acre, \$57.26. Team work, 81 days. Labor, 127 days. Value per acre of land, \$44.50.

2. *Value of products.*

1 1596 bushels corn at 35.4 cents, av. 6 yrs.....	564.98	14.124	35.40
2 40 acres stalks at \$3.25.....	130.00	3.250	8.14
Total	694.98	17.374	43.54

3. *Surplus Value.*

1 Surplus value—profit	246.61	6.165	15.45
------------------------------	--------	-------	-------

Equivalent to 10.77 per cent. on, capital invested.

Annual investment, interest and necessary profit at 12 per cent. on same and upon the value of machinery and horses used; also the surplus value of products above the sum of these expenses. (This surplus capitalized at 12 per cent. and credited to the land gives the value of the land for raising corn.)

Annual investment	310.93	7.773	19.48
Machinery \$146.80 at 12 per cent.	17.62	.440	1.10
Horses 52.80 at 12 per cent.	6.34	.159	.40
Annual investment 310.93 at 12 per cent.	37.32	.933	2.34
Total expenses less rent.....	372.21	9.305	23.32
Surplus credited to land.....	*322.77	8.069	20.22
	694.98	17.374	43.54

*Capitalized at 12 per cent. equivalent to \$2,523.08 or \$63.08 per acre. This is \$18.50 per acre above the value reported by the farmers.

In relation to the cost of producing 40 acres of corn as presented in the four preceding tables it is, perhaps, proper to repeat here a few facts to which attention has already been called.

In table XX, covering six pages, the cost per each acre in detail, the total cost of 40 acres and the average cost per acre are presented. Table XXI is made up of the totals of table XX. Table XXII is a more complete analysis of table XXI, including besides the expenses of that table, interest on the value of the machinery used and upon the sum of the annual investments. These items of expenses were added because they are unavoidable in farming and constitute a proper charge against the products.

It should be noticed that in these three tables the expenses in farming arising from the use of horses for motor power was arrived at by allowing wages, at ruling rates in the respective localities, for team work. It appeared, however, that this is not the proper way in which to treat expenses of this nature. Work horses are usually regarded as capital invested. This being the case, expenses from this source are with a few exceptions similar to the expenses of other capital used the cost of production was therefore made, in which the expenses arising from the horses used were treated from this point of view. This analysis is presented in table XXIII and includes in the expenses, wages for man's labor only, while for horses, depreciation and interest on their value and actual yearly cost, per acre, of their maintenance was allowed as expense. This method of treating expenses of this kind does not greatly affect the total cost, but is undoubtedly proper, at least in most cases.

The average cost of growing one acre of wheat as computed from table XXIII is shown below:

Items.	One acre.	One Bush.
	\$	Cts.
Plowing .....	.564	1.41
Harrowing, etc. ....	.272	.68
Planting .....	.162	.40
Cultivating .....	.836	2.09
Cutting, man and team.....	.218	.55
Cutting, extra man .....	.218	.55
Husking and crib	1.184	2.97
Shelling .....	.518	1.30
Marketing .....	.424	1.06
Seed .....	.075	.19
Taxes .....	.253	.64
Maintenance, horses .....	.800	2.01
Fertilizing	1.250	3.13
Other expenses .....	.500	1.26
Depreciation, machinery .....	.367	.91
Depreciation, horses .....	.132	.33
Annual investment	7.773	19.48
Interest, machinery .....	.220	.55
Interest, horses .....	.079	.20
Interest, annual investment .....	.467	1.17
Interest, land	2.670	6.69
Total	11.209	28.09

TABLE XXIV.

Data upon which cost of production and value of products, as shown in tables 27, 31, 35, 39, and 43, are based.

OFFICE NO.	WHEAT, ETC.									
	PLOWING.		HARROWING AND SEEDING.		CUTTING.		SHOCKING AND STACKING.			
	Time and wages for man and team.		Time and wages for man and team.		Time and wages for man and team.		Time and wages 1 man.		Time and wages 2 men and team.	
	Hours worked	Wages per hour	Hours worked	Wages per hour.	Hours worked	Wages per hour.	Hours worked.	Wages per hour	Hours worked.	Wages per hour
1.....	38.5	25.2	22.2	24.	8.5	27.7	10.6	12.2	12.	35.7
2.....	43.5	24.7	23.3	24.	9.8	24.7	10.	11.5	12.5	33.7
3.....	43.4	24.	26.5	23.5	9.	27.5	10.5	12.2	10.1	35.2
4.....	47.	25.2	30.	23.2	9.2	28.5	13.	12.	13.	35.2
5.....	45.5	24.2	22.5	25.5	9.	26.2	10.5	12.5	12.	35.5
6.....	48.	23.5	24.6	23.5	10.	28.	13.	11.3	15.	34.
7.....	44.6	21.4	24.8	22.6	9.	25.3	10.	10.6	11.4	32.
8.....	44.8	24.	28.7	24.5	9.8	27.8	11.5	12.	12.4	36.
9.....	44.4	23.	25.	23.5	9.7	27.5	10.	12.	15.4	34.6
10.....	42.1	23.	25.8	21.5	9.8	26.	10.4	12.	12.3	34.
11.....	48.	22.	23.3	25.1	10.	27.	12.5	11.4	14.	33.4
12.....	50.	22.5	24.	23.	9.4	27.	11.7	11.4	12.5	33.4
13.....	43.4	23.5	26.9	23.8	10.3	26.7	11.6	11.7	14.	35.
14.....	43.	24.	23.	23.4	8.6	26.7	12.3	11.5	11.6	34.
15.....	41.7	26.5	23.3	25.1	10.0	27.7	13.	11.3	14.	35.3
16.....	41.7	23.2	20.6	24.	8.5	27.	11.7	11.3	12.8	32.2
17.....	55.	23.9	26.9	24.	10.7	27.	10.8	12.	16.	36.1
18.....	42.	25.7	27.2	24.5	9.4	25.7	12.	11.8	13.5	34.8
19.....	48.1	24.7	25.1	24.5	10.3	27.2	13.	12.1	15.	35.8
20.....	46.	24.7	24.5	24.	10.	27.7	11.5	12.	13.	36.
21.....	52.	22.	23.7	21.	10.4	24.8	11.8	10.	13.7	30.7
22.....	50.	23.7	25.6	24.2	10.	26.5	13.5	11.4	15.	34.
23.....	47.6	25.	25.9	24.5	9.6	27.5	12.3	12.	14.6	36.
24.....	60.5	27.2	20.8	24.	9.1	26.5	12.	11.	13.3	33.5
25.....	45.4	22.	22.9	22.8	9.6	27.	10.6	12.9	15.4	32.5
26.....	43.2	22.5	25.6	22.5	9.6	26.2	10.7	11.2	12.1	33.7
27.....	43.6	23.2	22.8	24.	9.7	26.5	11.2	12.	12.6	35.
28.....	45.9	24.	25.2	25.	9.7	28.	13.2	12.	14.4	35.
29.....	41.	24.7	25.7	23.4	10.4	26.7	12.	12.1	15.	35.3
30.....	47.6	23.7	27.4	23.	9.5	26.2	11.6	12.	11.5	34.7
31.....	47.2	24.	26.2	24.5	9.3	27.	11.4	13.	12.7	36.
32.....	44.9	23.	22.7	23.	10.3	26.	12.3	12.	12.	34.
33.....	45.3	25.	26.	25.	9.5	29.	11.6	12.	12.	37.
34.....	52.8	22.7	26.	22.7	10.8	24.7	10.3	12.	13.	32.
35.....	47.6	24.	23.4	24.	10.2	28.	11.8	12.	16.3	35.
36.....	46.5	24.	26.1	23.9	10.	28.	12.3	12.5	12.3	36.
37.....	43.4	23.8	22.	23.2	9.3	27.	11.	12.8	12.3	36.
38.....	41.6	26.	21.1	25.5	9.4	28.	11.5	12.	13.7	37.
39.....	32.3	31.7	24.8	27.6	10.1	29.2	11.4	11.5	12.8	38.
40.....	32.3	28.7	19.7	27.6	8.2	28.7	10.	12.5	12.6	37.
Total.	1811.3	969.9	979.8	957.0	385.7	1080.4	462.1	473.9	490.1	1391.9
Average.	45.28	24.15	24.49	23.92	9.64	27.01	11.55	11.85	12.25	34.79

TABLE XXIV, continued.

Data upon which cost of production and value of products, as shown in tables 27, 31, 35, 39, and 43, are based.

OFFICE NO.	CORN.											
	PLOWING.		HARROWING AND PLANTING.				CULTIVATING.		CUTTING.			
	Time and wages for man and team.		Time and wages for man and team.				Time and wages for man and team.		Time and wages.			
			Harrowing.		Planting.							
	Hours worked	Wages per hour.	Hours worked.	Wages per hour.	Hours worked.	Wages per hour.	Hours worked	Wages per hour.	Hours worked	Wages per hour.		
	Cts.		Cts.		Cts.		C's.		Cts.			
1.....	38.5	25.2	16.	25.	85.	20.5	68.8	22.2	63.8	12.		
2.....	43.5	24.7	18.2	24.8	11.4	18.1	60.2	22.2	68.	11.5		
3.....	43.4	24.	19.5	24.5	11.7	16.7	60.	22.2	55.	12.5		
4.....	47.	25.2	23.2	23.2	12.	18.2	56.5	21.5	65.	12.		
5.....	45.5	24.5	17.6	27.2	14.5	14.5	53.	24.	25.4	24.		
6.....	48.	23.5	19.	24.	10.	19.2	72.	23.5	66.	11.		
7.....	44.6	21.4	18.1	22.4	10.8	17.5	48.7	21.4	19.	17.5		
8.....	44.8	24.	21.7	25.3	9.2	20.	49.3	24.	62.3	12.2		
9.....	44.4	23.7	23.8	24.6	10.	20.	44.	23.	56.6	12.		
10.....	42.1	23.	21.1	22.4	10.	18.5	47.8	23.	65.	12.		
11.....	48.	22.	19.8	24.5	13.	16.7	52.	21.7	77.	11.3		
12.....	50.	22.5	18.	24.	13.	15.6	67.	22.	66.	11.4		
13.....	43.4	23.5	16.	24.	15.	15.5	48.	22.5	71.	11.7		
14.....	43.	24.	19.2	23.7	9.3	18.5	59.	21.5	71.	11.5		
15.....	41.7	26.5	20.	25.2	12.5	16.3	64.	23.4	34.	14.1		
16.....	41.7	23.2	17.	24.7	12.	16.5	50.	22.7	40.	13.6		
17.....	55.	23.9	22.	24.	11.6	17.2	58.8	23.	71.	12.2		
18.....	42.	25.7	22.5	25.	17.	13.9	53.3	22.	29.7	13.9		
19.....	48.	24.7	18.7	24.8	10.	20.	60.2	22.5	62.	12.1		
20.....	46.	24.9	21.	24.5	11.	30.	60.	22.7	48.	14.		
21.....	52.	22.	17.	21.7	13.	16.	54.	20.7	77.	10.		
22.....	50.	23.7	19.2	25.5	13.	15.8	60.	22.5	46.	14.		
23.....	47.6	25.	19.5	25.5	10.7	20.	59.9	23.6	40.5	14.		
24.....	60.5	27.2	14.8	24.	9.2	18.5	42.	22.5	29.8	15.5		
25.....	45.4	22.	20.4	23.5	14.	15.5	65.	21.2	52.6	12.		
26.....	47.6	22.5	22.9	22.5	8.8	22.5	55.4	22.5	67.	11.		
27.....	43.6	23.2	18.9	24.7	8.9	20.5	48.4	23.7	30.4	15.5		
28.....	45.9	24.	20.8	26.	10.5	20.	53.	24.	25.4	25.		
29.....	41.	24.7	25.	23.7	11.5	18.1	62.3	21.	66.6	12.2		
30.....	47.6	23.7	18.5	23.7	13.5	15.7	54.6	20.	62.	12.		
31.....	47.2	24.	19.3	25.	10.	21.	52.7	23.	41.7	15.		
32.....	44.9	23.	15.5	24.	12.5	15.	46.7	22.	48.3	12.		
33.....	45.3	25.	18.	25.	8.3	24.	48.9	25.	58.5	12.		
34.....	52.8	22.7	16.2	22.7	13.3	15.2	35.	21.7	64.5	11.4		
35.....	47.6	24.	17.	24.	13.6	15.	47.7	24.	43.	12.		
36.....	46.5	24.	17.9	23.7	20.	13.7	56.6	23.3	53.8	12.5		
37.....	43.	23.8	18.6	23.7	8.8	19.5	50.5	22.8	65.5	12.8		
38.....	41.6	26.	14.3	26.	10.5	20.	44.4	25.	39.2	14.		
39.....	32.3	31.7	18.	28.2	12.5	17.7	48.5	26.	48.	12.		
40.....	32.3	28.7	15.4	29.2	8.3	23.4	64.3	24.7	28.9	17.5		
Total.	1795.3	987.	759.5	979.9	463.4	729.55	2179.5	909.	2112.1	526.3		
Average.	44.88	24.7	18.99	24.49	11.58	18.239	54.49	22.7	52.80	13.16		

TABLE XXIV, continued.

Data upon which cost of production and value of products, as shown in tables 27, 31, 35, 39, and 43, are based.

OFFICE NO.	SEED—QUANTITY USED PER ACRE.				Value per acre of land.	Value per acre of machinery and tools used.
	Wheat. Bushels.	Oats. Bushels.	Rye. Bushels.	Barley. Bushels.		
1.....	1.8	2.7	1.55	2.07	\$51.00	\$6.85
2.....	1.75	2.5	1.7	2.25	43.50	3.67
3.....	1.7	2.4	1.4	2.00	44.50	6.85
4.....	1.5	2.57	1.52	2.00	52.16	4.90
5.....	1.71	2.55	1.65	2.12	62.00	5.20
6.....	1.7	2.55	1.8	2.1	51.80	5.00
7.....	1.82	2.65	1.45	1.9	51.00	6.83
8.....	1.7	2.7	1.6	2.0	55.00	4.00
9.....	1.55	2.22	1.75	2.1	56.00	4.65
10.....	1.6	2.5	2.0	2.0	55.50	4.65
11.....	1.35	2.4	1.65	2.1	49.00	4.40
12.....	1.6	2.4	1.65	2.2	45.50	4.00
13.....	1.8	2.6	1.8	2.0	56.50	4.50
14.....	1.6	2.25	1.7	2.0	46.80	4.00
15.....	1.75	2.65	1.7	2.3	51.10	2.70
16.....	1.6	2.5	1.5	2.0	43.00	4.48
17.....	1.7	2.3	1.6	2.05	51.50	5.60
18.....	1.7	2.4	1.77	2.2	55.50	3.96
19.....	1.75	2.25	1.6	2.0	46.00	4.50
20.....	1.6	2.6	1.35	2.1	55.00	3.50
21.....	1.7	2.4	1.7	2.0	51.70	3.30
22.....	1.6	2.45	1.75	2.3	54.50	4.50
23.....	1.9	2.6	1.9	2.3	60.80	4.60
24.....	1.7	2.5	1.8	2.0	61.50	4.73
25.....	1.75	2.4	1.5	2.15	38.30	3.85
26.....	1.8	2.5	2.0	2.2	52.50	4.00
27.....	2.0	2.7	1.6	2.2	58.80	5.37
28.....	1.7	2.6	1.6	2.1	52.50	4.00
29.....	1.87	2.75	1.87	2.27	51.50	5.75
30.....	1.9	2.5	1.7	2.22	53.50	3.60
31.....	2.0	2.8	1.6	2.0	50.50	6.63
32.....	1.8	2.5	1.6	2.2	48.90	4.00
33.....	2.0	2.7	1.7	2.1	52.50	4.18
34.....	1.75	2.53	1.55	2.0	59.00	5.72
35.....	2.0	2.4	1.8	2.0	56.50	5.50
36.....	1.7	2.55	1.55	2.2	61.00	5.13
37.....	1.8	2.5	1.7	2.1	52.50	4.87
38.....	1.8	2.7	1.7	2.1	58.00	3.74
39.....	1.6	2.5	1.6	2.1	43.50	3.57
40.....	1.7	2.8	1.5	2.0	51.50	4.60
Total.	69.35	100.98	65.815	84.03	2091.86	185.84
Average.	1.73	2.52	1.64	2.10	52.296	4.646

TABLE XXIV.

Data upon which cost of production and value of products, as shown in tables 27, 31, 35, 39, and 43, are based.

OFFICE NO.	YIELD PER ACRE.									
	Wheat.		Oats.		Rye.		Barley.		Corn.	
	1896	Aver. 5 years	1896	Aver. 5 years	1896	Aver. 5 years	1896	Aver. 5 years	1896	Aver. 5 years
1.....	18.2	17.4	48.7	44.1	21.1	19.4	33.4	31.4	48.1	42.
2.....	17.1	16.1	41.0	37.5	20.	18.	29.8	29.	39.3	42.3
3.....	17.9	16.8	39.3	34.5	18.2	17.	29.8	27.7	43.0	38.1
4.....	18.5	15.6	41.6	37.	19.8	16.6	31.4	28.	40.1	33.4
5.....	18.8	19.7	45.8	44.2	17.7	16.9	31.5	30.2	45.2	41.8
6.....	18.7	18.0	44.8	44.1	20.7	20.	32.8	32.6	47.8	41.5
7.....	18.5	18.1	43.6	41.1	21.7	20.5	31.5	30.1	45.0	41.1
8.....	17.4	18.1	43.5	41.3	20.4	18.2	31.3	29.7	49.8	44.6
9.....	19.3	18.4	45.	45.3	21.	17.	34.6	31.9	47.5	44.8
10.....	21.1	19.8	47.	44.	22.7	20.5	34.1	31.7	48.6	43.4
11.....	16.8	15.6	42.5	38.1	19.5	21.6	30.2	28.7	42.3	40.4
12.....	17.3	16.0	41.8	38.2	19.8	18.	29.8	29.2	42.2	39.7
13.....	16.9	18.3	45.3	42.8	19.	20.1	32.1	31.6	42.3	39.6
14.....	16.4	17.0	40.7	39.2	19.2	19.3	34.0	32.1	41.6	38.6
15.....	17.2	16.4	43.4	23.4	19.9	18.4	28.8	29.5	43.5	40.0
16.....	16.8	18.2	44.5	40.5	23.4	21.	34.3	33.7	42.8	40.6
17.....	17.6	16.1	44.8	40.8	18.5	16.5	31.2	27.8	45.0	39.2
18.....	17.6	15.9	44.1	38.7	20.	18.	39.8	29.4	44.3	40.7
19.....	18.0	16.4	44.8	38.2	20.9	19.	32.2	29.4	44.2	40.8
20.....	17.2	16.1	44.5	38.4	20.1	18.	32.3	30.6	44.5	40.5
21.....	19.8	19.4	48.	44.5	22.1	21.6	38.	36.3	49.0	44.2
22.....	17.1	16.1	42.	38.5	20.	18.	30.5	29.	44.2	40.5
23.....	16.6	16.8	42.6	40.0	20.	18.	28.8	28.4	41.6	39.2
24.....	18.5	18.9	46.5	41.5	19.6	20.	32.4	31.9	44.8	39.4
25.....	17.5	17.8	32.7	37.9	18.4	18.4	32.1	31.1	42.1	37.3
26.....	17.6	16.2	44.	39.1	20.	18.	28.	29.1	43.7	39.5
27.....	17.0	16.5	48.8	43.8	20.9	20.3	35.	32.8	43.7	40.2
28.....	17.4	16.2	42.6	39.	20.4	18.2	30.6	29.4	43.9	40.2
29.....	18.8	16.2	42.7	38.	20.5	18.	31.1	29.3	42.5	39.8
30.....	17.1	16.6	44.1	31.	20.6	18.8	35.9	32.3	48.3	42.5
31.....	18.7	17.8	46.6	41.4	19.3	18.1	34.7	31.8	45.5	41.8
32.....	17.7	18.7	41.8	42.3	19.4	20.6	30.8	32.	39.8	38.4
33.....	18.2	19.3	43.1	40.8	23.7	20.8	34.	30.1	47.1	42.7
34.....	17.1	18.6	41.1	39.1	18.4	17.5	34.7	31.8	48.5	45.4
35.....	19.4	16.9	42.3	40.8	19.6	19.	36.9	33.3	46.6	43.6
36.....	16.2	16.4	42.1	37.5	17.7	16.3	31.5	29.4	44.4	40.3
37.....	16.3	18.3	42.8	40.5	20.5	19.	32.9	29.3	52.0	46.8
38.....	19.2	19.7	42.3	42.	21.4	20.3	34.9	32.9	43.7	40.9
39.....	17.3	15.8	41.5	35.2	19.	16.8	32.3	28.8	41.6	39.0
40.....	18.0	16.8	41.7	34.6	19.	17.5	33.2	29.6	42.7	38.6
Total.....	712.8	693.0	1736.0	1537.9	804.1	749.1	1282.2	1222.9	1783.0	1633.4
Average.....	17.82	17.3	43.4	38.4	20.1	18.73	32.05	30.56	44.57	40.8

TABLE XXV. SUMMARY TABLE XXIV. PAGES.

On this page, in order that they may become more easily accessible to those who may desire to use them, the results in the preceding table are presented in a more convenient form than was possible in that table.

For a more complete presentation of the basic data in which the results on this page are included see next table in order.

1. Grain: Time required, wages per hour.

Items.	Hours. 400 acres.	Hours. 1 acre.	Wages per hour. Cts.
Plowing	1811.3	4.528	24.15
Harrowing, etc., seeding	979.8	2.449	23.92
Cutting	385.7	.964	27.01
Shocking, one man	462.1	1.155	11.85
Stacking, two men and team.....	490.1	1.225	34.79

2. Corn: Time required, wages per hour.

Plowing	1795.3	4.488	24.70
Harrowing, etc.	759.5	1.899	24.49
Planting	463.4	1.158	18.24
Cultivating	2179.5	5.449	22.70
Cutting	2112.1	5.280	13.16

3. Quantities of seed used.

	Bushels 400 acres.	Bushels one acre.
Wheat	693.5	1.73
Oats	1009.8	2.52
Rye	658.2	1.64
Barley	840.3	2.10

4. Value of land and machinery used.

	Value 400 acres.	Value one acre
Land	\$20,920.00	\$52.30
Machinery	1,856.00	4.64

5. Yield 1896 and average for 5 years.

	Bushels 400 acres, 1896.	Bushels one acre, 1896.	Bushels 400 acres, 5 years.	Bushels one acre 5 years.
Wheat	712.8	17.8	693.0	17.3
Oats	1736.0	43.4	1537.9	38.4
Rye	804.1	20.1	749.1	18.7
Barley	1282.2	32.1	1222.9	30.6
Corn	1783.0	44.6	1633.4	40.8

In the last preceding two tables is presented the greater part of the data upon which the "Cost of Production" and "Value of Product," as shown in Tables 27, 31, 35, 39, and 43 have been computed.

Table XXIV. contains 40 presentations, each including 10 reports, showing the time required and wages per hour for man and team or single man, as the case may be, for Plowing, Harrowing and Seeding, Cutting, Shocking, Stacking 10 acres of grain, and for Plowing, Harrowing, Planting, Cultivating, Cutting 10 acres of corn; the quantity of seed used per acre in each case of Wheat, Oats, Rye, Barley; the value per acre of land and machinery used; the yield per acre in 1896; and the average yield for five years of Wheat, Oats, Rye, Barley and Corn.

Table XXV shows the totals and averages in Table XXIV. This table is divided into five sub-tables. In 1 and 2 of these sub-tables under "Time required and wages per hour" are shown the total number of hours required for each class of labor on 400 acres, the average time per acre and average wage per hour; in 3, under "Quantities of seed used" are shown the quantity use for 400 acres and the average per acre of each crop; in 4, under "Value of land and machinery used" are shown the total value of 400 acres and the average value per acre in each case of the land and machinery used; in 5, under "Yield 1896, and average yield" are shown the total yield of 400 acres, 1896, and the average yield per acre, the average yearly yield on 400 acres during 5 years and the average per acre of each of the five crops.

As already alluded to, these two tables do not include all the data collected or used as a basis for the Cost of Production and Value of Product, as shown in the tables referred to. Another table was therefore compiled, which, while it presents only averages and totals, covers all points inquired about, and will be found both complete and reliable. This table is divided into 7 sub-tables and is presented on the next two pages.

TABLE XXVI.

FACTORS OF COST AND VALUE IN PRODUCING GRAIN.

On these two pages are presented in seven sections the data from which the "Cost of Production" and "Value of Products" as shown in Tables 27-46 inclusive have been computed. This data was obtained directly from farmers. In Section 1 is shown the rate of wages paid per day and month for labor and team work with or without board included. In Section 2 is shown the average time needed per acre for properly performing the different parts of the work involved from the time the soil is prepared for seed until the time of threshing. Section 3 shows the data upon which the expenses of threshing, marketing and seed are based. Section 4 shows the number of acres under cultivation, and not under cultivation, respectively, owned or controlled by the farmers reporting, and the value per acre in each case and the average value

1. Wages paid per day and month.

Items.	WITH BOARD.		WITHOUT BOARD.	
	Day.	Night.	Day.	Month.
Man and team of two horses.....	\$1.85	\$42.00	\$2.40	\$52.00
Labor, men .....	.90	17.50	1.18	26.20
Team of two horses .....	.95	24.50	1.22	25.80

2. Time needed for doing the different parts of work.

Items.	Acres per day	Hours per acre.	Items.	Acres per day	Hours per acre.
Plowing	2.21	4.53	Planting corn, one man, hand	4.00	2.60
Harrowing for grain....	6.25	1.60	Cultivating corn, one man and team.....	1.83	5.45
Harrowing for corn....	5.36	1.90	Cutting corn, two men and team.....	5.55	1.80
Seeding grain	11.63	.86	Cutting corn one man, hand.....	1.29	7.80
Cutting for grain.....	10.46	.96	Cutting corn, average table	1.89	6.23
Stacking grain two men	8.70	1.16	Husking corn, one man, hand .....	.88	11.36
Stacking grain, two men	8.13	1.23			
Planting corn, one man and team.....	8.62	1.16			

3. Threshing marketing and seed.

Items.	THRESHING.			MARKETING.			SEED PER ACRE.		
	Bushels per day.	Number of men employ'd	Cost per bushel for machine.	Miles of hauling.	Loads per day.	Bush. per load.	Bushels.	Price.	
								1896.	5 y'rs.
Wheat	1000	14	1.	6.5	2	42	1.7	Cts. 75	Cts. 70
Corn	Shelling	.....	1.3	6	2	42	2	35	40
Oats	1850	14	.90	6	2	75	2.5	30	35
Rye	1000	14	1.	6	2	45	1.6	45	50
Barley.....	1550	14	1.	6	2	45	2.1	40	45

per acre. Section 5 shows the total value of the machinery used and the value of the same to each acre under cultivation, and the total value of the horses used and the average to each acre owned or controlled. Section 6 shows the data upon which taxes, the cost of maintaining horses and the cost of fertilizing are based.

In Section 7 is presented the data from which the "Value of Products" was arrived at or the yield in bushels per acre and the prices per bushel, also the value per acre of the accompanying straw or stalk. As regards the value of straw and stalks two estimates are given: one giving their value as compared with the commercial value of other products used for the same purpose; the other giving the value reported by the farmers.

For details of the greater part of the averages shown here see the preceding table.

4. Acres in farms, value per acre.

Items.	Acres under cultivation.	Acres not under cultivation.	Total acres, average price.
Acres controlled by the 400 farmers reporting.....	36,236	24,138	60,374
Value per acre, average value.....	\$52.30	\$27.00	\$42.00

5. Value of machinery and horses used.

Items.	Value per acre.	Total value.
Machinery: Per acre under cultivation, total.....	\$4.65	\$168,497
Horses: Per acre controlled, total.....	1.46	88,128

6. Other items or factors of expense.

Items.	Per acre.	Total.
Taxes: Per acre controlled, total paid.....	\$0.26	\$15,695
Maintenance of horses: Per acre controlled, total cost.....	.92	55,298
Manures: Loads per acre, total loads.....	2.25	81,531
Manures: Bought, price per load \$0.75. Labor, cost per load.....		.32
Horses: Number used, 1530. Average value.....		57.60

7. Yield per acre, price per bushel, value per acre of straw.

Items.	YIELD PRICE, 1896.		YIELD PRICE, AVERAGE 5 YEARS.		VALUE OF STRAW.	
	Bushels.	Cents.	Bushels.	Cents.	Estimated in feed and fert. stuffs.	Reported by farmers.
Wheat.....	17.8	64.80	17.3	61.17	\$2.20	\$1.40
Corn.....	44.6	23.95	40.8	34.70	6.07	3.00
Oats.....	43.4	16.85	38.4	25.44	4.64	2.50
Rye.....	20.0	33.80	18.5	46.20	3.10	2.00
Barley.....	32.5	28.80	30.6	44.50	3.84	1.50

WHEAT.—TABLE XXVII.

Cost of production and value of products of 400 acres of wheat in 10 acre lots.

OFFICE NO.	PLOWING.				HARROWING AND SEEDING.				CUTTING.			
	Cost per acre and bushel.				Cost per acre and bushel.				Cost per acre and bushel.			
	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years
\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	
1.....	8.72	4.78	8.72	5.02	5.56	3.04	5.56	3.19	2.35	1.29	2.35	1.35
2.....	10.74	6.28	10.74	6.67	5.68	3.33	5.68	3.53	2.42	1.42	2.42	1.50
3.....	10.41	5.83	10.41	6.19	6.54	3.66	6.54	3.88	2.47	1.33	2.47	1.48
4.....	11.84	6.40	11.84	6.85	6.96	3.74	6.96	4.03	2.62	1.42	2.62	1.51
5.....	11.01	5.54	11.01	5.59	5.80	2.92	5.80	2.95	2.37	1.20	2.37	1.20
6.....	11.28	6.03	11.28	6.27	5.81	3.12	5.81	3.23	2.80	1.49	2.80	1.56
7.....	9.51	5.14	9.51	5.17	5.44	2.94	5.44	2.95	2.28	1.23	2.28	1.24
8.....	10.75	6.18	10.75	5.94	7.06	4.05	7.06	3.90	2.72	1.56	2.72	1.60
9.....	10.21	5.28	10.21	5.55	5.95	3.08	5.95	3.23	2.66	1.37	2.66	1.45
10.....	9.67	4.59	9.67	4.86	5.64	2.67	5.64	2.83	2.55	1.21	2.55	1.28
11.....	10.56	6.28	10.56	6.77	5.32	3.16	5.32	3.41	2.70	1.61	2.70	1.73
12.....	11.25	6.50	11.25	7.03	5.58	3.28	5.58	3.49	2.53	1.46	2.53	1.53
13.....	10.20	5.64	10.20	5.57	6.40	3.53	6.40	3.49	2.75	1.53	2.75	1.50
14.....	10.32	6.29	10.32	6.08	5.40	3.29	5.40	3.18	2.29	1.39	2.29	1.34
15.....	11.05	6.42	11.05	6.73	5.85	3.40	5.85	3.56	2.77	1.61	2.77	1.69
16.....	9.67	5.76	9.67	5.31	4.96	2.95	4.96	2.72	2.29	1.36	2.29	1.26
17.....	13.14	7.46	13.14	8.16	6.20	3.53	6.20	3.86	2.99	1.69	2.99	1.86
18.....	10.79	6.13	10.79	6.79	6.72	3.81	6.72	4.23	2.42	1.37	2.42	1.53
19.....	11.85	6.59	11.85	7.22	6.17	3.44	6.17	3.76	2.80	1.56	2.80	1.71
20.....	11.36	6.60	11.36	7.06	5.85	3.40	5.85	3.64	2.77	1.62	2.77	1.72
21.....	11.44	6.06	11.44	5.89	5.04	2.66	5.04	2.61	2.57	1.36	2.57	1.33
22.....	11.85	6.94	11.85	7.36	6.30	3.69	6.30	3.92	2.65	1.55	2.65	1.64
23.....	11.90	7.17	11.90	7.09	6.40	3.86	6.40	3.82	2.62	1.58	2.62	1.56
24.....	10.46	5.65	10.46	5.53	4.99	2.69	4.99	2.64	2.39	1.30	2.39	1.26
25.....	9.98	5.74	9.98	5.61	5.13	2.96	5.13	2.90	2.59	1.49	2.59	1.46
26.....	10.71	6.09	10.71	6.61	5.10	3.28	5.75	3.54	2.52	1.44	2.52	1.56
27.....	10.10	5.95	10.10	6.05	5.51	3.24	5.51	3.29	2.55	1.50	2.55	1.53
28.....	11.02	6.33	11.02	6.81	6.37	3.67	6.37	3.94	2.72	1.56	2.72	1.69
29.....	10.12	5.38	10.12	6.25	6.03	3.20	6.03	3.72	2.77	1.47	2.77	1.71
30.....	11.28	6.59	11.28	6.80	6.34	3.71	6.34	3.82	2.49	1.46	2.49	1.50
31.....	11.33	6.06	11.33	6.37	6.38	3.41	6.38	3.60	2.50	1.34	2.50	1.40
32.....	10.32	5.84	10.32	5.51	5.21	2.94	5.21	2.78	2.67	1.51	2.67	1.42
33.....	10.87	5.97	10.87	5.63	6.50	3.56	6.50	3.36	2.75	1.51	2.75	1.42
34.....	11.97	7.00	11.97	6.44	5.85	3.43	5.85	3.14	2.66	1.55	2.66	1.43
35.....	11.42	5.89	11.42	6.16	5.60	2.89	5.60	3.02	2.84	1.46	2.84	1.53
36.....	11.16	6.88	11.16	6.81	6.20	3.83	6.20	3.78	2.80	1.72	2.80	1.70
37.....	10.32	5.77	10.32	5.64	5.13	2.87	5.13	2.79	2.57	1.44	2.57	1.40
38.....	10.81	5.63	10.81	5.49	5.40	2.82	5.40	2.73	2.64	1.37	2.64	1.34
39.....	10.24	5.92	10.24	6.48	6.86	3.96	6.86	4.34	2.95	1.71	2.95	1.87
40.....	9.26	5.18	9.26	5.47	5.49	3.07	5.49	3.24	2.34	1.32	2.34	1.37
Total.....	430.89	241.76	430.89	248.83	235.37	132.08	235.37	136.04	104.14	58.36	104.14	60.11
Average..	1.0772	6.044	1.0772	6.221	.5884	3.302	.5884	3.401	.2603	1.459	.2603	1.503

WHEAT.—TABLE XXVII, continued.

Cost of production and value of products of 400 acres of wheat in 10 acre lots.

OFFICE NO.	FERTILIZING.				SEED.				SHOCKING AND STACKING.			
	Cost per acre and bushel.				Cost per acre and bushel.				Cost per acre and bushel.			
	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years
	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.
1.....	25.30	13.90	25.30	14.54	11.61	6.38	11.05	6.35	5.58	3.06	5.58	3.20
2.....	25.00	14.63	25.00	15.53	11.20	6.55	10.85	6.74	5.36	3.14	5.36	3.33
3.....	23.00	12.85	23.00	13.69	10.91	6.10	10.39	6.19	4.56	2.55	4.56	2.72
4.....	25.00	13.52	25.00	14.45	9.60	5.19	9.22	5.33	6.13	3.32	6.13	3.54
5.....	25.00	12.00	25.00	12.69	11.11	5.58	10.28	5.22	5.57	2.80	5.57	2.82
6.....	25.00	13.38	25.00	13.89	11.16	5.98	10.03	5.56	6.56	3.51	6.56	3.65
7.....	26.00	14.06	26.00	14.13	12.08	6.53	11.21	6.09	4.71	2.54	4.71	2.56
8.....	25.55	14.68	25.55	14.12	10.93	6.28	10.45	5.77	5.86	3.36	5.86	3.24
9.....	26.70	13.83	26.70	14.51	10.03	5.19	9.66	5.25	6.51	3.37	6.51	3.54
10.....	26.20	12.41	26.20	13.17	10.40	4.93	9.52	4.78	5.45	2.68	5.45	2.74
11.....	25.00	14.88	25.00	16.02	8.91	5.30	8.37	5.37	6.09	3.63	6.09	3.90
12.....	25.00	14.46	25.00	15.62	10.24	5.91	9.92	6.20	5.50	3.17	5.50	3.43
13.....	25.00	13.81	25.00	13.67	11.52	6.36	10.92	5.96	6.25	3.45	6.25	3.42
14.....	25.00	15.25	25.00	14.70	10.59	6.46	9.76	5.74	5.35	3.27	5.35	3.15
15.....	25.00	14.54	25.00	15.24	11.42	6.64	11.74	7.15	6.48	3.76	6.48	3.95
16.....	25.00	14.87	25.00	13.73	10.48	6.24	9.92	5.45	4.28	2.55	4.28	2.36
17.....	25.00	14.20	25.00	15.53	11.01	6.26	10.40	6.45	7.08	2.02	7.08	4.39
18.....	25.00	14.20	25.00	15.73	10.96	6.26	10.42	6.55	6.10	3.47	6.10	3.82
19.....	25.00	13.89	25.00	14.24	11.01	6.11	10.85	6.62	7.40	4.11	7.40	4.52
20.....	25.00	14.53	25.00	15.53	10.29	5.98	9.92	6.16	6.06	3.53	6.06	3.76
21.....	25.00	13.23	25.00	12.89	10.94	5.79	11.22	5.78	5.38	2.84	5.38	2.78
22.....	25.00	14.62	25.00	15.53	10.33	6.04	9.92	6.16	6.63	3.88	6.63	4.12
23.....	25.00	15.06	25.00	14.88	12.16	7.32	11.78	7.01	6.79	4.10	6.79	4.04
24.....	25.00	13.51	25.00	13.23	11.53	6.23	10.34	5.47	5.78	3.12	5.78	3.06
25.....	25.00	14.37	25.00	14.05	8.97	5.17	11.47	6.44	6.31	3.62	6.31	3.54
26.....	25.00	14.21	25.00	15.43	11.52	6.49	11.16	6.89	5.27	3.00	5.27	3.25
27.....	25.00	14.71	25.00	14.97	13.28	7.81	11.94	7.15	5.76	3.38	5.76	3.45
28.....	25.00	14.36	25.00	15.43	10.88	6.25	10.54	6.50	6.62	3.80	6.62	4.08
29.....	25.00	13.29	25.00	15.43	12.00	6.38	11.62	7.17	6.74	3.59	6.74	4.15
30.....	25.85	15.12	25.85	15.56	12.29	7.19	11.58	6.98	5.38	3.15	5.38	3.24
31.....	23.20	12.41	23.20	13.03	12.40	6.63	12.20	6.85	6.08	3.25	6.08	3.41
32.....	25.25	14.27	25.25	13.61	11.84	6.69	10.80	5.77	5.66	3.19	5.66	3.02
33.....	25.00	13.73	25.00	12.95	12.86	7.06	12.00	6.21	5.84	3.21	5.84	3.02
34.....	27.35	15.99	27.35	14.70	11.19	6.55	10.60	6.65	5.40	3.15	5.40	3.90
35.....	25.00	12.89	25.00	13.51	12.94	6.67	11.96	6.46	7.12	3.67	7.12	3.84
36.....	26.95	16.63	26.95	16.44	10.88	6.71	10.58	6.45	6.10	3.76	6.10	3.72
37.....	25.30	14.13	25.30	13.82	11.65	6.51	11.08	6.06	5.91	3.30	5.91	3.23
38.....	25.25	13.15	25.25	12.82	12.09	6.29	10.26	5.20	6.45	3.86	6.45	3.28
39.....	27.80	16.07	27.80	17.60	11.04	6.39	10.03	6.35	6.20	3.58	6.20	3.92
40.....	25.70	14.36	25.70	15.20	10.95	6.17	10.40	6.14	5.85	3.27	5.85	3.46
Total....	1010.4	566.56	1010.4	582.81	447.20	250.57	426.36	245.66	238.15	133.41	238.15	137.57
Average..	2.5260	14.164	2.5260	14.570	1.1180	6.264	1.0659	6.141	.5954	3.335	.5954	3.439

WHEAT.—TABLE XXVII, continued.

Cost of production and value of products of 400 acres of wheat in 10 acre lots.

OFFICE No.	THRESHING.				MARKETING.				INTEREST.			
	Cost per acre and bushel.				Cost per acre and bushel.				Cost per acre and bushel.			
	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years
\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	
1.....	5.46	3.00	5.22	3.00	4.91	2.70	4.69	2.70	30.60	16.41	30.60	17.53
2.....	4.10	2.40	3.86	2.40	4.44	2.60	4.18	2.60	26.10	15.25	26.10	16.21
3.....	4.65	2.60	4.37	2.60	5.55	3.10	5.22	3.10	26.70	14.92	26.70	15.89
4.....	4.99	2.70	4.67	2.70	5.36	2.90	5.01	2.90	31.30	16.92	31.30	18.09
5.....	4.64	2.34	4.60	2.34	4.98	2.50	4.92	2.50	37.20	18.69	37.20	18.88
6.....	4.48	2.40	4.32	2.40	3.92	2.10	3.78	2.10	31.08	16.63	31.08	17.28
7.....	4.62	2.50	4.60	2.50	4.81	2.60	4.78	2.60	30.60	16.54	30.60	16.63
8.....	4.35	2.50	4.52	2.50	5.22	3.00	5.43	3.00	33.00	18.96	33.00	18.23
9.....	5.11	2.65	4.88	2.65	5.11	2.65	4.88	2.65	33.60	17.41	33.60	18.26
10.....	5.27	2.50	4.97	2.50	5.48	2.60	5.17	2.60	33.30	15.78	33.30	16.73
11.....	4.20	2.50	3.90	2.50	4.81	2.86	4.51	2.89	29.40	17.50	29.40	18.85
12.....	4.15	2.40	3.85	2.40	4.84	2.80	4.28	2.80	27.30	15.77	27.30	17.06
13.....	5.06	2.80	5.12	2.80	5.61	3.10	5.67	3.10	33.90	18.73	33.90	18.64
14.....	4.76	2.90	4.93	2.90	4.92	3.00	5.10	3.00	28.08	17.12	28.08	16.61
15.....	4.64	2.70	4.43	2.70	4.12	2.39	3.94	2.40	30.66	17.82	30.66	18.71
16.....	4.36	2.60	4.73	2.60	4.36	2.60	4.73	2.60	25.80	15.36	25.80	14.11
17.....	4.40	2.50	4.02	2.50	5.45	3.10	4.99	3.10	30.90	17.56	30.90	19.19
18.....	4.22	2.39	3.81	2.39	6.33	3.59	5.72	3.59	33.30	18.92	33.30	20.93
19.....	4.86	2.70	4.42	2.70	5.40	3.00	4.92	3.00	27.60	15.33	27.60	16.83
20.....	4.13	2.40	3.86	2.40	5.84	3.40	5.47	3.40	33.00	19.18	33.00	20.49
21.....	4.72	2.50	4.85	2.50	4.34	2.30	4.46	2.30	31.02	16.42	31.02	15.99
22.....	3.93	2.29	3.70	2.29	4.61	2.69	4.34	2.69	32.70	19.12	32.70	20.32
23.....	3.82	2.30	3.86	2.30	5.31	3.20	5.38	3.20	24.48	14.75	24.48	14.53
24.....	5.36	2.90	5.48	2.90	4.99	2.70	5.10	2.70	36.90	19.95	36.90	19.53
25.....	5.04	2.89	5.16	2.89	5.39	3.09	5.51	3.09	22.98	13.20	22.98	12.91
26.....	3.87	2.20	3.56	2.20	5.46	3.10	5.02	3.10	31.50	17.90	31.50	19.44
27.....	4.25	2.50	4.17	2.50	3.57	2.10	3.50	2.10	35.28	20.75	35.28	21.14
28.....	4.35	2.50	4.05	2.50	6.26	3.60	5.83	3.60	31.50	18.10	31.50	19.44
29.....	4.70	2.50	4.05	2.50	6.20	3.30	5.34	3.30	30.90	16.43	30.90	19.07
30.....	4.27	2.50	4.15	2.50	5.47	3.20	5.31	3.20	32.10	18.77	32.10	19.34
31.....	5.23	2.80	4.96	2.80	5.05	2.70	4.80	2.70	30.30	16.22	30.30	17.02
32.....	4.96	2.80	5.23	2.80	6.02	3.40	6.35	3.40	29.34	16.58	29.34	15.64
33.....	5.09	2.80	5.40	2.80	5.82	3.20	6.17	3.20	31.50	17.33	31.50	16.36
34.....	4.19	2.45	4.55	2.45	4.36	2.55	4.74	2.55	35.40	20.70	35.40	19.04
35.....	4.46	2.30	4.25	2.30	5.24	2.70	4.99	2.70	33.90	17.47	33.90	18.32
36.....	4.21	2.60	4.26	2.60	4.54	2.80	4.59	2.80	36.60	22.59	36.60	22.31
37.....	4.81	2.70	4.94	2.70	4.12	2.30	4.20	2.30	31.50	17.59	31.50	17.21
38.....	5.38	2.80	5.51	2.80	6.14	3.19	6.30	3.19	34.80	18.13	34.80	17.68
39.....	3.98	2.30	3.63	2.30	4.67	2.70	4.26	2.70	26.10	15.08	26.10	16.52
40.....	4.83	2.70	4.56	2.70	5.01	2.80	4.63	2.80	30.90	17.26	30.90	18.28
Total..	183.89	102.81	179.39	102.81	204.03	114.21	198.21	114.25	1243.12	695.54	1243.12	715.09
Average..	4.597	2.570	4.485	2.570	5.101	2.855	4.955	2.856	3.108	17.308	3.108	17.877

WHEAT — TABLE. XXVII, continued.

Cost of production and value of products of 400 acres of wheat in 10 acre lots.

OFFICE NO.	WEAR AND TEAR.				TAXES.				OTHER EXPENSES.			
	Cost per acre and bushel.				Cost per acre and bushel.				Cost per acre and bushel.			
	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years
\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	
1.....	6.81	3.14	6.81	3.91	2.50	1.37	2.50	1.44	5.00	2.74	5.00	2.88
2.....	3.67	2.15	3.67	2.28	2.50	1.46	2.50	1.55	5.00	2.91	5.00	3.10
3.....	6.85	3.83	6.85	4.08	2.50	1.39	2.50	1.49	5.00	2.79	5.00	2.97
4.....	4.90	2.65	4.90	2.83	2.50	1.35	2.50	1.44	5.00	2.70	5.00	2.88
5.....	5.20	2.61	5.20	2.66	2.50	1.25	2.50	1.26	5.00	2.50	5.00	2.53
6.....	5.00	2.66	5.00	2.77	2.50	1.33	2.50	1.38	5.00	2.62	5.00	2.77
7.....	6.83	3.69	6.83	3.71	2.50	1.35	2.50	1.36	5.00	2.70	5.00	2.71
8.....	4.00	2.30	4.00	2.21	2.50	1.44	2.50	1.38	5.00	2.88	5.00	2.76
9.....	4.65	2.40	4.65	2.52	2.50	1.30	2.50	1.36	5.00	2.60	5.00	2.72
10.....	4.65	2.20	4.65	2.34	2.50	1.18	2.50	1.25	5.00	2.37	5.00	2.50
11.....	4.40	2.62	4.40	2.82	2.50	1.49	2.50	1.60	5.00	2.98	5.00	3.20
12.....	4.00	2.31	4.00	2.50	2.50	1.44	2.50	1.57	5.00	2.88	5.00	3.14
13.....	4.50	2.49	4.50	2.46	2.50	1.38	2.50	1.36	5.00	2.76	5.00	2.72
14.....	4.00	2.44	4.00	2.35	2.50	1.52	2.50	1.47	5.00	3.04	5.00	2.95
15.....	2.70	1.57	2.70	1.64	2.50	1.40	2.50	1.53	5.00	2.92	5.00	3.06
16.....	4.48	2.66	4.48	2.46	2.50	1.49	2.50	1.37	5.00	2.98	5.00	2.74
17.....	5.60	3.18	5.60	3.48	2.50	1.42	2.50	1.55	5.00	2.84	5.00	3.11
18.....	3.96	2.24	3.96	2.49	2.50	1.42	2.50	1.57	5.00	2.85	5.00	3.15
19.....	4.50	2.50	4.50	2.74	2.50	1.38	2.50	1.52	5.00	2.77	5.00	3.04
20.....	3.50	2.03	3.50	2.18	2.50	1.45	2.50	1.55	5.00	2.90	5.00	3.10
21.....	3.30	1.74	3.30	1.70	2.50	1.32	2.50	1.28	5.00	2.64	5.00	2.56
22.....	4.50	2.62	4.50	2.79	2.50	1.46	2.50	1.55	5.00	2.93	5.00	3.11
23.....	4.60	2.77	4.60	2.73	2.50	1.50	2.50	1.48	5.00	3.00	5.00	2.96
24.....	4.73	2.56	4.73	2.50	2.50	1.35	2.50	1.32	5.00	2.70	5.00	2.64
25.....	3.85	2.21	3.85	2.16	2.50	1.43	2.50	1.40	5.00	2.87	5.00	2.81
26.....	4.00	2.28	4.00	2.48	2.50	1.42	2.50	1.54	5.00	2.85	5.00	3.09
27.....	5.37	3.15	5.37	3.21	2.50	1.47	2.50	1.49	5.00	2.95	5.00	2.99
28.....	4.00	2.29	4.00	2.46	2.50	1.44	2.50	1.54	5.00	2.88	5.00	3.09
29.....	5.75	3.06	5.75	3.55	2.50	1.33	2.50	1.54	5.00	2.67	5.00	3.09
30.....	3.60	2.10	3.60	2.17	2.50	1.46	2.50	1.50	5.00	2.92	5.00	3.01
31.....	6.63	3.54	6.63	3.72	2.50	1.33	2.50	1.40	5.00	2.66	5.00	2.80
32.....	4.00	2.25	4.00	2.14	2.50	1.41	2.50	1.33	5.00	2.43	5.00	2.66
33.....	4.18	2.30	4.18	2.16	2.50	1.37	2.50	1.29	5.00	2.75	5.00	2.59
34.....	5.72	3.34	5.72	2.00	2.50	1.46	2.50	1.34	5.00	2.93	5.00	2.69
35.....	5.50	2.83	5.50	2.97	2.50	1.29	2.50	1.35	5.00	2.58	5.00	2.70
36.....	5.13	3.16	5.13	3.13	2.50	1.56	2.50	1.52	5.00	3.12	5.00	3.05
37.....	4.87	2.73	4.87	2.66	2.50	1.39	2.50	1.37	5.00	2.78	5.00	2.74
38.....	3.74	1.96	3.74	1.89	2.50	1.30	2.50	1.27	5.00	2.60	5.00	2.54
39.....	3.57	2.07	3.57	2.27	2.50	1.44	2.50	1.57	5.00	2.89	5.00	3.15
40.....	4.60	2.51	4.60	2.72	2.50	1.39	2.50	1.48	5.00	2.78	5.00	2.96
Total....	185.84	103.74	185.84	105.83	100.00	55.98	100.00	57.56	200.00	111.66	200.00	115.26
Average..	.4646	2.593	.4646	2.646	.250	1.374	.250	1.436	.500	2.791	.500	2.881

WHEAT.—TABLE XXVII, continued.

Cost of production and value of products of 400 acres of wheat in 10 acre lots.

OFFICE NUMBER.	TOTAL COST OF RAISING PRODUCTS.				VALUE OF STRAW.				VALUE OF GRAIN.			
	Cost per acre and bushel.				Value per acre and bushel.				Value per acre and bushel.			
	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years
	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.
1.....	114.40	62.81	113.38	65.16	25.40	13.96	25.40	14.59	117.39	64.5	107.03	61.4
2.....	106.21	62.11	105.36	65.44	20.00	11.63	20.00	11.42	109.44	64.	99.82	62.
3.....	109.14	60.95	108.01	64.28	20.00	11.17	20.00	11.90	114.91	64.2	101.97	60.7
4.....	116.20	62.81	115.15	66.55	22.00	11.88	22.00	12.71	118.40	64.	106.39	61.5
5.....	120.38	60.49	119.45	60.63	24.50	12.31	24.50	12.43	129.35	65.	122.33	62.1
6.....	114.59	61.25	113.16	62.86	21.00	11.23	21.00	11.66	122.85	65.7	106.20	59.
7.....	114.38	61.82	113.46	61.05	24.95	13.48	24.95	13.56	122.84	66.4	111.34	61.6
8.....	116.94	67.19	116.84	64.55	22.00	12.99	22.00	12.48	111.88	64.3	111.31	61.5
9.....	118.03	61.13	117.20	63.69	22.60	11.66	22.50	12.23	125.47	64.7	114.63	62.3
10.....	116.11	55.02	114.62	57.68	23.65	11.21	23.65	11.88	137.15	65.	118.40	59.5
11.....	108.89	64.81	107.75	69.06	20.00	11.90	20.00	12.82	110.88	66.	96.72	62.
12.....	107.89	62.98	106.70	66.82	20.00	11.36	20.00	12.19	110.72	64.	99.20	62.
13.....	118.69	65.58	118.21	64.59	21.00	11.60	21.00	11.47	115.84	64.	111.08	60.7
14.....	108.20	65.97	107.73	63.37	20.00	12.19	20.00	11.76	108.08	65.9	103.70	61.
15.....	112.19	65.23	112.12	68.36	20.00	1.04	20.00	12.19	112.	65.3	100.69	61.4
16.....	103.18	61.42	103.36	56.71	23.00	13.68	23.00	12.63	110.04	65.5	112.84	62.
17.....	119.27	67.76	117.82	73.18	20.00	11.36	20.00	12.19	114.04	64.8	98.53	61.2
18.....	117.30	66.65	116.74	72.78	20.00	11.37	20.00	12.57	113.52	64.5	97.46	61.3
19.....	114.09	63.38	113.01	68.90	21.00	11.67	21.00	12.80	113.22	62.9	101.68	62.
20.....	115.30	67.02	114.29	70.99	21.00	12.21	21.00	13.04	109.56	63.7	99.82	62.
21.....	111.25	58.86	111.78	57.61	24.00	12.69	24.00	12.37	127.61	64.4	119.31	61.5
22.....	116.00	6.83	115.09	71.48	20.00	11.69	20.00	12.42	110.46	64.6	99.82	62.
23.....	110.58	66.61	110.31	65.60	20.00	12.05	20.00	11.90	106.24	64.	104.16	62.
24.....	119.63	64.66	118.67	62.78	25.97	14.14	25.97	13.74	126.54	68.4	115.01	60.3
25.....	102.74	59.04	105.48	59.26	20.00	11.49	20.00	11.23	111.14	63.3	106.62	59.9
26.....	113.10	64.26	111.99	69.13	20.00	11.36	20.00	12.34	112.64	64.	100.44	62.
27.....	118.17	69.51	116.68	69.87	24.07	14.15	24.07	14.41	112.88	66.4	99.69	59.7
28.....	116.22	66.78	115.19	71.08	20.00	11.49	20.00	12.34	111.36	64.	100.44	62.
29.....	117.71	62.60	115.82	71.49	20.00	10.64	20.00	12.34	110.32	64.	100.44	62.
30.....	116.57	68.17	115.58	69.62	22.15	12.95	22.15	13.34	110.62	64.7	101.09	60.9
31.....	116.00	62.35	115.88	65.10	20.95	11.20	20.95	11.77	115.94	62.	108.58	61.
32.....	112.77	63.31	112.33	60.08	24.40	13.67	24.40	13.04	116.46	65.8	112.20	60.
33.....	117.91	64.79	117.71	60.98	23.00	12.63	23.00	11.91	117.03	64.3	115.80	60.
34.....	121.59	71.10	121.74	64.37	27.10	15.85	27.10	14.57	108.41	63.4	112.71	60.6
35.....	121.52	62.64	120.08	64.86	20.70	10.66	20.70	11.18	125.52	64.7	100.63	59.3
36.....	122.07	75.36	121.87	74.31	22.10	13.65	22.10	13.48	103.68	64.	102.83	62.7
37.....	113.68	63.51	113.32	61.92	24.65	13.77	24.65	13.47	105.81	64.7	112.73	61.6
38.....	120.20	62.60	118.66	60.23	24.12	12.56	24.12	12.24	129.02	67.2	112.49	57.1
39.....	110.91	64.11	109.14	69.07	20.00	11.56	20.00	12.66	119.37	69.	99.06	62.7
40.....	112.43	62.81	111.23	65.82	23.15	12.93	23.15	13.70	115.27	64.	103.43	61.2
Total	4583.03	2566.68	4551.87	2621.82	878.96	491.23	878.96	503.52	4634.21	2591.3	4248.62	2446.7
Average	11.457	64.16	11.379	65.54	2.197	12.28	2.197	12.58	11.585	6.478	10.622	6.117

WHEAT.—TABLE XXVII, continued.

Cost of production and value of products of 400 acres of wheat in 10 acre lots.

OFFICE NO.	TOTAL VALUE OF PRODUCTS RAISED.				PROFIT.			
	Total value per acre and bushel.				Profit per acre and bushel.			
	Acre 1896 \$	Bush 1896 Cts.	Acre 5 years \$	Bush 5 years Cts.	Acre 1896 \$	Bush 1896 Cts.	Acre 5 years \$	Bush 5 years Cts.
1.....	142.79	78.46	132.43	75.99	2.839	15.65	1.905	10.83
2.....	129.44	75.63	119.82	73.43	2.323	13.52	1.446	7.99
3.....	134.91	75.37	121.97	72.60	2.577	14.42	1.396	8.32
4.....	140.40	75.88	128.39	74.21	2.420	13.07	1.324	7.66
5.....	153.85	77.31	146.83	74.53	3.347	16.82	2.738	13.90
6.....	143.85	76.93	127.20	70.66	2.926	15.68	1.404	7.80
7.....	147.79	79.88	136.29	75.16	3.341	18.06	2.283	13.51
8.....	134.48	77.29	133.9	73.98	1.754	10.10	1.707	9.43
9.....	147.97	76.36	137.13	74.53	2.994	15.23	1.993	10.84
10.....	160.80	76.21	142.05	71.38	4.469	21.19	2.745	13.80
11.....	130.88	77.90	116.72	74.82	2.199	13.09	.897	5.76
12.....	130.46	75.56	119.20	74.50	2.283	13.18	1.250	7.68
13.....	136.84	75.60	132.08	72.17	1.815	10.02	1.387	7.68
14.....	128.08	78.09	123.70	72.76	1.988	12.12	1.597	9.39
15.....	132.31	76.34	120.69	73.59	2.012	11.11	.857	5.23
16.....	133.04	79.18	135.84	74.63	2.986	17.76	3.248	17.92
17.....	134.04	76.16	118.53	73.62	1.477	8.40	.071	.44
18.....	133.52	75.87	117.46	73.87	1.622	9.22	.172	1.09
19.....	134.22	74.57	122.68	74.80	2.013	11.19	.967	5.90
20.....	130.56	75.91	120.82	75.04	1.526	8.89	.653	4.05
21.....	151.61	77.09	143.31	73.87	4.036	18.23	3.153	16.26
22.....	130.46	76.29	119.82	74.42	.446	8.46	.473	2.94
23.....	126.24	76.05	124.16	73.90	1.566	9.44	1.385	8.30
24.....	152.51	82.54	140.98	74.54	3.288	17.88	2.231	11.76
25.....	131.14	74.79	126.62	71.13	2.840	15.75	2.114	11.87
26.....	132.64	75.36	120.44	74.34	1.954	11.10	.845	5.21
27.....	136.95	80.55	123.76	74.11	1.878	11.04	.708	4.24
28.....	131.36	75.49	120.44	74.34	1.514	8.71	.529	3.26
29.....	140.32	74.64	120.44	74.34	2.261	12.04	.462	2.85
30.....	132.77	77.65	123.24	74.24	1.620	9.48	.766	4.62
31.....	136.89	73.20	129.53	72.77	2.029	10.85	1.365	7.67
32.....	140.86	79.47	136.60	73.04	2.809	16.16	2.427	12.96
33.....	140.03	76.93	138.80	71.91	2.212	12.14	2.109	10.92
34.....	135.51	79.25	139.81	75.17	1.392	8.15	1.807	10.80
35.....	146.22	75.36	121.33	70.98	2.470	12.72	.125	6.12
36.....	125.78	77.65	124.93	76.18	.371	2.29	.306	1.87
37.....	130.46	78.47	137.38	75.07	1.678	14.96	2.406	13.15
38.....	153.14	79.76	136.61	69.34	3.294	17.16	1.795	9.11
39.....	139.37	80.56	119.06	75.36	2.846	16.45	.992	6.29
40.....	138.42	76.93	126.58	74.90	2.599	14.12	1.535	9.08
Total.....	5513.17	3082.53	5127.58	2950.22	93.014	515.85	57.571	328.40
Average.....	13.790	77.06	12.819	73.75	2.328	12.89	1.439	8.410

TABLE XXVIII.—SUMMARY OF TABLE XXVII.

In the tables on this page have been summarized the results in the foregoing table. The tables show the total cost of producing 400 acres of wheat and the average cost per acre and bushel, the total value of products of 400 acres and the average value per acre and bushel. In the analysis of expenses wages was allowed for team work as well as for labor.

(For a more complete analysis of expenses in this case, both when wages is allowed for team work and when horses or their value is treated as capital, see the next two pages.)

2. Cost of production.

Items.	400 acres, 1896.	One acre.	Bushel	Per- cent- age.	400 acres, 5 years.	One acre.	Bushel
	\$	\$	Cts.		\$	\$	Cts.
Plowing	430.89	1.077	6.05	9.43	430.89	1.077	6.22
Harrowing and seeding.	235.37	.588	3.30	5.14	235.37	.588	3.40
Cutting	104.14	.260	1.46	2.27	104.14	.260	1.50
Fertilizing	1010.40	2.526	14.16	22.07	1010.40	2.526	14.57
Seed	447.20	1.118	6.27	9.77	426.36	1.066	6.14
Shocking and stacking..	238.15	.595	3.34	5.21	238.15	.595	3.44
Thrashing	183.89	.460	2.57	4.00	179.39	.449	2.57
Marketing	204.03	.510	2.86	4.48	198.21	.495	2.86
Interest	1243.12	3.108	17.39	27.10	1243.12	3.108	17.88
Wear and tear.....	185.84	.465	2.59	4.03	185.84	.465	2.65
Taxes	100.00	.250	1.38	2.15	100.00	.250	1.43
Other expenses	200.00	.500	2.79	4.35	200.00	.500	2.88
Total	4583.03	11.457	64.16	100.00	4551.87	11.379	65.54

2. Value of products.

Value of grain.....	\$4634.21	\$11.59	64.78	\$4248.62	\$10.62	61.17
Value of straw	878.96	2.20	12.28	878.96	2.20	12.58
Total value	\$5513.17	\$13.79	77.06	\$5127.58	\$12.82	73.75

3. Profit and loss.

Profit	\$930.14	\$2.328	12.82	\$575.71	\$14.39	8.21
Loss						
Balance profit	\$930.14	\$2.328	12.82	\$575.71	\$14.39	8.21

TABLE XXIX.—COST OF PRODUCTION AND VALUE OF 400 ACRES OF WHEAT.

The data upon which the calculations in the tables on this page are based may also be found in tables 24, 25, 26. "Cost of Production" is shown in Section 1. "Value of Products" is shown in Section 2. Section 3 shows the "Surplus Value or Cost," as the case may be. In Section 4 is presented the "Annual Investment" and the respective amounts of interest and necessary profit at 12 per cent. on same and upon the value of the machinery used, and also the "Surplus Value" above the sum of these expenses. It should be noticed that in this presentation wages has been allowed for team work in place of treating horses, or their value, as other capital.

Items.	400 acres.	One acre.	'Per bushel.
	\$	\$	Cts.
1 Plowing .....1,812 hours at 24 cents	434.88	1.087	6.27
2 Harrowing, etc. ....640 hours at 24 cents	153.60	.384	2.22
3 Seeding 344 hours at 24 cents	82.56	.206	1.20
4 Cutting .....384 hours at 24 cents	92.16	.230	1.33
5 Shocking .....464 hours at 11.8 cents	54.75	.137	.79
6 Stacking, man and team.....492 hours at 24 cents	118.08	.295	1.70
7 Stacking, extra help.....492 hours at 11.8 cents	58.06	.145	.84
8 Threshing, labor.....970 hours at 11.8 cents	114.46	.288	1.65
9 Threshing, machinery.....6,930 bushels at 1 cent	69.30	.173	1.00
10 Marketing.....325 hours at 24 cents	198.00	.495	2.86
11 Seed .....680 bushels at 70 cents	476.00	1.190	6.87
12 Taxes .....400 acres at 26 cents	104.00	.260	1.50
13 Fertilizers, clover and .....1,000 loads manure	400.00	1.000	5.77
14 Other expenses.....400 acres at 50 cents	200.00	.500	2.88
15 Depreciation machinery..1,860.00 dollars at 10 per cent.	186.00	.465	2.68
Annual investment	\$2741.85	\$6.855	39.56
16 Interest on machinery...1,860.00 dollars at 6 per cent	111.60	.279	1.62
17 Interest an. investment..2,741.85 dollars at 6 per cent	164.51	.411	2.35
18 Interest, land.....16,880.00 dollars at 6 per cent	1012.80	2.532	14.60
Total	\$4030.76	10.077	58.18

Total investment, \$21,481.85. Average investment per acre, \$53.71. Team work, 449.7 days. Labor, 642.3 days. Value per acre of land, \$42.20.

2. Value of products.

1 6,930 bushels of wheat at 64.8 cts. av. 6 years.....	\$4490.64	\$11.226	64.8
2 400 acres of straw \$1.20.....	480.00	1.200	6.92
Total	\$4970.64	\$12.426	71.72

3. Surplus value.

3 Value above costs, (profits).....	\$939.88	\$2.349	13.54
-------------------------------------	----------	---------	-------

Equivalent to 4.33 per cent. on capital invested.

Part IV. Annual investment, interest and necessary profit at 12 per cent. on same and upon the value of machinery used; also the surplus value of the products above the sum of these expenses. This surplus if credited to land and capitalized at 12 per cent. gives the value of the land for raising wheat.

An. investment	\$2741.85	\$6.855	39.56
Machinery .....1,860 dollars at 12 per cent	223.20	.558	3.22
Annual investment .....2,741.85 dollars at 12 per cent	329.02	.822	4.76
Total expenses less rent.....	\$3294.07	\$8.235	47.54
Surplus credited to land	*1676.57	4.191	24.18
	\$4970.64	\$12.426	71.72

* Capitalized at 12 per cent. equivalent to \$13,971.42 or \$34.93 per acre. This is \$7.33 per acre below the value reported by the farmers.

TABLE XXX.—COST OF PRODUCTION AND VALUE OF 400 ACRES OF WHEAT.

The data upon which the calculations in the table on this page are based may also be found in tables 24, 25, 26. "Cost of Production" is shown in Section 1. "Value of Product" is shown in Section 2. Section 3 shows the "Surplus Value" above cost. In Section 4 is shown the "Annual Investment" and the respective amounts of interest and the necessary profit at 12 per cent. on same and upon the value of machinery and horses used, also the surplus value of these expenses. In this presentation horses, or their value, have been treated as other capital.

Items.	400 acres.	One acre.	Bushel.
	\$	\$	Cts.
1 Plowing 1812 hours at 11.8 cents	213.81	.534	3.09
2 Harrowing, etc. 640 hours at 11.8 cents	75.52	.189	1.09
3 Seeding 377 hours at 11.8 cents	40.59	.101	.58
4 Cutting 384 hours at 11.8 cents	45.33	.113	.65
5 Shocking 464 hours at 11.8 cents	54.76	.137	.79
6 Stacking 984 hours at 11.8 cents	116.12	.290	1.68
7 Threshing, labor. 970 hours at 11.8 cents	114.46	.286	1.65
8 Threshing, machine 6930 bush. at 1 cent	69.30	.173	1.00
9 Marketing 825 hours at 11.8 cents	97.35	.245	1.40
10 Seed 680 bushels at 70 cents	476.00	1.190	6.87
11 Taxes 400 acres at 26 cents	104.00	.260	1.50
12 Maintenance, horses 400 acres at 92 cents	368.00	.920	5.31
13 Fertilizing, clover and 1000 loads manure	490.00	1.000	5.77
14 Other expenses 400 acres at 50 cents	200.00	.500	2.88
15 Depreciation, machinery. 1,860.00 dollars at 10 per cent.	186.00	.465	2.68
16 Depreciation, horses 584.00 dollars at 10 per cent.	58.40	.146	.84
Annual investment	\$2619.63	\$6.549	37.78
17 Interest, machinery 1,860.00 dollars at 6 per cent.	111.60	.279	1.62
18 Interest, horses 584.00 dollars at 6 per cent.	35.00	.088	.51
19 Interest, an. investment. 2,619.63 dollars at 6 per cent.	157.18	.393	2.27
20 Interest, land. 16,880.00 dollars at 6 per cent	1012.80	2.532	14.60
Total	\$3936.21	\$9.841	56.78

Total investment, \$21,943.63. Average investment per acre, \$54.86. Team work, 496 days. Labor, 642.3 days. Value per acre of land, \$42.20.

2. Value of products.

1 6930 bushels wheat at 64.8 cents; av. 6 years.	\$4490.64	\$11.226	64.80
2 400 acres o straw at \$1.20.	480.00	1.200	6.92
	\$4970.64	\$12.426	71.72

3. Surplus value.

Value above costs (profits).....	\$1034.43	\$2.585	14.94
----------------------------------	-----------	---------	-------

Equivalent to 4.72 per cent. on capital invested.

Part IV. Annual investment, interest and necessary profit at 12 per cent. on same and upon the value of machinery and horses used; also the surplus value of the products above the sum of these expenses. This surplus if credited to land and capitalized at 12 per cent. gives the value of the land for raising wheat.

Annual investment	\$2619.63	\$6.549	37.78
Machinery \$1,860.00 at 12 per cent.	223.20	.558	3.22
Horses 584.00 at 12 per cent.	70.00	.175	1.03
Annual investment \$2,619.63 at 12 per cent	314.36	.786	4.54
Total expenses less rent.....	\$3227.19	\$8.068	46.57
Surplus credited to land.....	*1743.45	4.358	25.15
Total	\$4970.64	\$12.426	71.72

*Capitalized at 12 per cent. equivalent to \$14,523.76 or \$36.31 per acre. This is \$5.89 per acre below the value reported by the farmers.

In relation to the cost of producing 40 acres of wheat as presented in the four preceding tables it is, perhaps, proper to repeat here a few facts to which attention has already been called.

In table XXVII, covering six pages, the cost per each acre in detail, the total cost of 400 acres and the average cost per acre are presented. Table XXVIII is made up of the totals of table XXVII. Table XXIX is a more complete analysis of table XXVII, including besides the expenses of that table, interest on the value of the machinery used and upon the sum of the annual investments. These items of expenses were added because they are unavoidable in farming and constitute a proper charge against the products.

It should be noticed that in these three tables the expenses in farming arising from the use of horses for motor power was arrived at by allowing wages, at ruling rates in the respective localities, for team work. It appeared, however, that this is not the proper way in which to treat expenses of this nature. Work horses are usually regarded as capital invested. This being the case, expenses from this source are with a few exceptions similar to the expenses of other capital used and should, therefore, be treated accordingly. Another analysis of the cost of production was therefore made, in which the expenses arising from the horses used were treated from this point of view. This analysis is presented in table XXX, and includes in the expenses, wages for man's labor only, while for horses, depreciation and interest on their value and actual yearly cost, per acre, of their maintenance was allowed as expense. This method of treating expenses of this kind does not greatly affect the total cost, but is undoubtedly proper, at least in most cases.

The average cost of growing one acre of wheat as computed from table XXVII, is shown below:

Items.	One acre.	One bushel.
	\$	Cts.
Plowing .....	.534	3.09
Harrowing, etc.....	.189	1.09
Seeding .....	.101	.58
Cutting .....	.113	.65
Shocking .....	.137	.79
Stacking .....	.290	1.68
Threshing, labor .....	.286	1.66
Threshing, machine .....	.173	1.00
Marketing .....	.245	1.40
Seed	1.190	6.87
Taxes .....	.260	1.50
Maintenance, horses .....	.920	5.31
Fertilizing	1.000	5.77
Other expenses .....	.500	2.88
Depreciation, machinery .....	.465	2.68
Depreciation, horses .....	.146	.84
Annual investment	\$6.549	37.78
Interest, machinery .....	.279	1.62
Interest, horses .....	.088	.51
Interest, annual investment .....	.393	2.27
Interest, land	2.632	14.60
Total	\$9.841	56.78

OATS—TABLE XXXI.

Cost of production and value of products of 400 acres of oats in 10 acre lots.

OFFICE NO.	PLOWING.				HARROWING AND SEEDING.				CUTTING.			
	Cost per acre and bushel.				Cost per acre and bushel.				Cost per acre and bushel.			
	Acres 1896 \$	Bush 1896 Cts.	Acres 5 years \$	Bush 5 years Cts.	Acres 1896 \$	Bush 1896 Cts.	Acres 5 years \$	Bush 5 years Cts.	Acres 1896 \$	Bush 1896 Cts.	Acres 5 years \$	Bush 5 years Cts.
1.....	8.72	1.79	8.72	2.00	5.56	1.14	5.56	1.27	2.35	.49	2.35	.57
2.....	10.74	2.62	10.74	2.83	5.68	1.39	5.68	1.45	2.42	.59	2.42	.64
3.....	10.41	2.64	10.41	3.01	6.54	1.66	6.54	1.92	2.47	.63	2.47	.72
4.....	11.84	2.85	11.84	3.20	6.96	1.70	6.96	1.88	2.62	.62	2.62	.71
5.....	11.01	2.39	11.01	2.49	5.80	1.28	5.80	1.31	2.37	.52	2.37	.54
6.....	11.28	2.52	11.28	2.56	5.81	1.30	5.81	1.33	2.80	.63	2.80	.64
7.....	9.51	2.18	9.51	2.31	5.44	1.25	5.44	1.37	2.28	.52	2.28	.55
8.....	10.75	2.38	10.75	2.60	7.06	1.56	7.06	1.71	2.72	.60	2.72	.66
9.....	10.21	2.26	10.21	2.25	5.95	1.31	5.95	1.31	2.66	.59	2.66	.59
10.....	9.67	2.06	9.67	2.19	5.64	1.20	5.64	1.27	2.55	.54	2.55	.58
11.....	10.56	2.49	10.56	2.80	5.32	1.25	5.32	1.39	2.70	.64	2.70	.71
12.....	11.25	2.69	11.25	2.94	5.58	1.33	5.58	1.46	2.53	.61	2.53	.67
13.....	10.20	2.25	10.20	2.38	6.40	1.41	6.40	1.50	2.75	.60	2.75	.64
14.....	10.32	2.54	10.32	2.60	5.40	1.34	5.40	1.35	2.29	.57	2.29	.58
15.....	11.05	2.55	11.05	2.84	5.85	1.35	5.85	1.50	2.77	.63	2.77	.71
16.....	9.67	2.18	9.67	2.39	4.96	1.12	4.96	1.23	2.29	.51	2.29	.57
17.....	13.14	2.93	13.14	3.22	6.20	1.39	6.20	1.53	2.99	.67	2.99	.74
18.....	10.79	2.45	10.79	2.79	6.72	1.49	6.72	1.73	2.42	.55	2.42	.62
19.....	11.85	2.46	11.85	3.10	6.17	1.37	6.17	1.60	2.80	.65	2.80	.74
20.....	11.36	2.55	11.36	2.95	5.85	1.32	5.85	1.53	2.77	.62	2.77	.72
21.....	11.44	2.38	11.44	2.60	5.04	1.05	5.04	1.16	2.57	.53	2.57	.58
22.....	11.85	2.8	11.85	3.08	6.30	1.50	6.30	1.62	2.65	.63	2.65	.68
23.....	11.90	2.79	11.90	2.97	6.40	1.50	6.40	1.60	2.62	.61	2.62	.66
24.....	10.46	2.26	10.46	2.52	4.99	1.07	4.99	1.21	2.39	.51	2.39	.58
25.....	9.98	2.42	9.98	2.59	5.22	1.28	5.22	1.36	2.59	.64	2.59	.68
26.....	10.71	2.44	10.71	2.74	5.75	1.32	5.75	1.46	2.52	.58	2.52	.65
27.....	10.10	2.07	10.10	2.31	5.51	1.13	5.51	1.27	2.55	.52	2.55	.59
28.....	11.02	2.59	11.02	2.83	6.37	1.51	6.37	1.65	2.72	.64	2.72	.69
29.....	10.12	2.37	10.12	2.67	6.03	1.41	6.03	1.58	2.77	.65	2.77	.73
30.....	11.28	2.56	11.28	2.82	6.34	1.44	6.34	1.58	2.49	.57	2.49	.62
31.....	11.33	2.43	11.33	2.74	6.38	1.38	6.38	1.54	2.50	.53	2.50	.60
32.....	10.32	2.33	10.32	2.44	5.21	1.18	5.21	1.23	2.67	.60	2.67	.63
33.....	10.87	2.52	10.87	2.67	6.50	1.50	6.50	1.60	2.75	.64	2.75	.63
34.....	11.97	2.92	11.97	3.05	5.85	1.44	5.85	1.48	2.66	.65	2.66	.68
35.....	11.42	2.68	11.42	2.79	5.66	1.33	5.60	1.38	2.84	.67	2.84	.69
36.....	11.16	2.66	11.16	2.95	6.20	1.48	6.20	1.64	2.80	.66	2.80	.74
37.....	10.32	2.41	10.32	2.55	5.13	1.20	5.13	1.28	2.50	.59	2.50	.62
38.....	10.81	2.56	10.81	2.57	5.40	1.29	5.40	1.28	2.64	.62	2.64	.62
39.....	10.24	2.47	10.24	2.78	6.86	1.65	6.86	1.88	2.95	.71	2.95	.80
40.....	9.26	2.22	9.26	2.40	5.49	1.31	5.49	1.42	2.34	.56	2.34	.60
Total....	430.89	98.86	430.89	107.52	235.46	54.13	235.46	58.86	104.07	23.89	104.07	25.96
Average..	1.077	2.471	1.077	2.688	.5886	1.353	.5886	1.471	.2602	.597	.2602	.649

COST OF PRODUCTION.

OATS—TABLE XXXI, continued.

Cost of production and value of products of 400 acres of oats in 10 acre lots.

OFFICE No.	FERTILIZING.				SEED.				SHOCKING AND STACKING.			
	Cost per acre and bushel.				Cost per acre and bushel.				Cost per acre and bushel.			
	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years
\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	
1.....	24.10	4.96	24.10	5.51	4.40	.90	6.67	1.52	5.58	1.14	5.58	1.27
2.....	25.00	6.09	25.00	6.59	4.05	.99	5.82	1.54	5.36	1.30	5.36	1.41
3.....	24.00	6.09	24.00	6.95	4.03	1.03	5.81	1.68	4.56	1.17	4.56	1.33
4.....	25.00	6.00	25.00	6.70	4.49	1.08	6.23	1.68	6.13	.47	6.13	1.66
5.....	23.70	5.16	23.70	5.37	4.43	.96	6.42	1.45	5.57	1.22	5.57	1.26
6.....	25.00	5.59	25.00	5.68	4.23	.95	6.88	1.56	6.56	1.47	6.56	.49
7.....	25.00	5.73	25.00	6.08	4.61	1.06	7.05	1.71	4.71	1.08	4.71	1.14
8.....	26.10	5.76	26.10	6.32	4.59	1.01	7.07	1.71	5.86	1.30	5.86	1.42
9.....	27.90	6.17	27.90	6.16	3.87	.86	5.89	1.29	6.51	1.44	6.51	1.43
10.....	25.80	5.49	25.80	5.89	4.25	.91	6.50	1.48	5.40	1.16	5.46	1.24
11.....	25.00	5.88	25.00	6.56	3.88	.91	5.52	1.44	6.09	1.41	6.09	1.60
12.....	25.00	5.98	25.00	6.55	3.84	.92	5.54	1.45	5.50	1.32	5.50	1.44
13.....	25.00	5.50	25.00	5.82	4.29	.94	6.91	1.61	6.25	1.37	6.25	1.45
14.....	25.00	6.14	25.00	6.31	3.75	.92	5.73	1.44	5.35	1.31	5.35	1.35
15.....	25.00	5.76	25.00	6.44	4.18	.96	6.02	1.55	6.48	1.50	6.48	1.67
16.....	25.00	5.62	25.00	6.15	4.52	1.02	6.55	1.62	4.28	.96	4.28	1.06
17.....	25.00	5.58	25.00	6.13	3.91	.87	5.49	1.34	7.08	1.59	7.08	1.73
18.....	25.00	5.67	25.00	6.46	3.88	.88	5.54	1.43	6.10	1.38	6.10	1.58
19.....	25.00	5.59	25.00	6.55	3.80	.84	5.21	1.37	7.40	1.64	7.40	1.93
20.....	25.00	5.62	25.00	6.51	4.23	.95	5.98	1.55	6.06	1.36	6.06	1.58
21.....	25.00	5.21	25.00	5.68	4.68	.98	6.55	1.49	5.38	1.12	5.38	1.22
22.....	25.00	5.95	25.00	6.49	3.99	.95	5.74	1.48	6.63	1.58	6.63	1.78
23.....	25.00	5.87	25.00	6.25	4.16	.98	5.98	1.50	6.79	1.59	6.79	1.70
24.....	25.60	5.51	25.60	6.17	4.10	.88	6.80	1.64	5.78	1.24	5.78	1.39
25.....	25.00	6.09	25.00	6.48	4.05	.99	4.62	1.19	6.31	1.53	6.31	1.64
26.....	25.00	5.68	25.00	6.39	3.00	.68	5.75	1.48	5.27	1.19	5.27	1.35
27.....	29.40	6.01	29.40	6.73	4.48	.91	7.45	1.70	5.76	1.18	5.76	1.31
28.....	25.00	5.87	25.00	6.41	4.16	.98	5.98	1.54	6.62	1.55	6.62	1.67
29.....	28.00	6.66	28.00	7.37	3.40	.79	6.32	1.67	6.74	1.58	6.74	1.78
30.....	24.05	5.46	24.05	6.02	4.27	.97	6.17	1.54	5.38	1.22	5.38	1.35
31.....	24.45	5.24	24.45	5.90	4.76	1.03	7.05	1.71	6.08	1.30	6.08	1.47
32.....	25.10	5.67	25.10	5.92	4.00	.90	7.00	1.65	5.66	1.27	5.66	1.33
33.....	24.50	5.69	24.50	6.04	4.70	1.09	6.91	1.69	5.84	1.35	5.84	1.43
34.....	24.30	.07	24.95	6.35	4.17	1.02	6.44	1.64	5.40	1.31	5.40	1.38
35.....	24.35	5.75	24.35	5.96	3.96	.94	6.36	1.56	7.12	1.69	7.12	1.74
36.....	24.10	5.72	24.10	6.37	4.51	1.07	6.29	1.67	6.10	1.45	6.10	1.62
37.....	24.10	5.63	24.10	5.95	4.30	1.01	6.50	1.60	5.91	1.39	5.91	1.46
38.....	19.80	4.69	19.80	4.72	4.64	1.09	7.21	1.72	6.45	1.52	6.45	1.54
39.....	25.35	6.11	25.35	6.89	4.50	1.09	6.20	1.68	6.20	1.49	6.20	1.50
40.....	25.20	6.04	25.20	6.53	4.87	1.16	7.00	1.82	5.85	1.41	5.85	1.52
Total..	1000.55	229.20	1000.55	249.41	167.93	38.47	251.15	62.39	238.15	54.55	238.15	59.40
Average.	2.501	5.730	2.501	6.235	.4198	.962	.6279	1.559	.5954	1.364	.5954	1.485

OATS—TABLE XXXI, continued.

Cost of production and value of products of 400 acres of oats in 10 acre lots.

OFFICE No.	THRESHING.				MARKETING.				INTEREST.			
	Cost per acre and bushel.				Cost per acre and bushel.				Cost per acre and bushel.			
	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years
\$	Cts.	\$	Cts.	\$	Cts.	\$	\$	\$	Cts.	\$	Cts.	
1.....	8.28	1.70	7.42	1.70	9.74	2.00	8.74	2.00	30.60	6.28	30.60	7.00
2.....	7.38	1.80	6.81	1.80	6.56	1.60	6.06	1.60	26.10	6.36	26.10	6.89
3.....	6.70	1.70	5.86	1.70	7.48	1.89	6.55	1.89	26.70	6.78	26.70	7.74
4.....	8.32	2.00	7.40	2.00	6.65	1.60	5.92	1.60	31.30	7.52	31.30	8.46
5.....	7.80	1.70	7.51	1.70	7.34	1.60	7.07	1.60	37.20	8.11	37.20	8.42
6.....	7.16	1.59	7.05	1.59	5.82	1.29	5.73	1.29	31.08	6.94	31.08	7.04
7.....	7.19	1.65	6.78	1.65	6.76	1.55	6.37	1.55	30.60	7.02	30.60	7.44
8.....	8.15	1.80	7.43	1.80	9.51	2.10	8.67	2.10	33.00	7.28	33.00	7.99
9.....	8.13	1.80	8.15	1.80	9.04	2.00	9.06	2.00	33.60	7.43	33.60	7.42
10.....	7.99	1.70	7.48	1.70	8.46	1.80	7.92	1.80	33.30	7.09	33.30	7.57
11.....	8.50	2.00	7.62	2.00	8.07	1.92	7.24	1.90	29.40	6.92	29.40	7.72
12.....	7.10	1.70	6.49	1.70	7.52	1.80	6.87	1.80	27.30	6.53	27.30	7.14
13.....	8.17	1.79	7.72	1.79	8.62	1.90	8.15	1.90	33.90	7.49	33.90	7.90
14.....	8.14	2.00	7.92	2.00	5.69	1.39	5.54	1.39	28.08	6.89	28.08	7.09
15.....	7.81	1.80	6.98	1.80	5.64	1.29	5.04	1.30	30.66	7.06	30.66	7.90
16.....	8.45	1.90	7.69	1.90	7.56	1.70	6.88	1.70	25.80	5.80	25.80	6.37
17.....	7.61	1.70	6.93	1.70	8.06	1.80	7.34	1.80	30.90	6.89	30.90	7.57
18.....	8.37	1.90	7.85	1.90	11.02	2.50	9.68	2.50	33.30	7.65	33.30	8.60
19.....	9.41	2.10	8.02	2.10	7.17	1.60	6.11	1.60	27.60	6.16	27.60	7.23
20.....	7.56	1.70	6.53	1.70	8.01	1.80	6.92	1.80	33.00	7.42	33.00	8.59
21.....	8.64	1.80	7.92	1.80	7.20	1.50	6.60	1.50	31.02	6.46	31.02	7.05
22.....	7.98	1.90	7.31	1.90	6.72	1.60	6.16	1.60	32.70	7.79	32.70	8.49
23.....	7.67	1.80	7.20	1.80	8.52	2.00	8.00	2.00	24.48	5.28	24.48	6.12
24.....	9.76	2.10	8.72	2.10	8.83	1.90	7.89	1.90	36.90	7.93	36.90	8.89
25.....	7.39	1.79	6.94	1.79	7.70	1.89	7.33	1.89	22.98	6.59	22.98	5.96
26.....	7.92	1.80	7.03	1.80	8.36	1.90	7.42	1.90	31.50	7.16	31.50	8.05
27.....	8.80	1.80	7.86	1.80	5.88	1.10	4.80	1.10	35.28	7.21	35.28	8.07
28.....	8.09	1.90	7.41	1.90	9.80	2.30	8.97	2.30	31.50	7.39	31.50	8.08
29.....	7.68	1.80	6.84	1.80	8.52	2.00	7.60	2.00	30.90	7.23	30.90	8.13
30.....	6.61	1.50	6.00	1.50	7.49	1.70	6.80	1.70	32.10	7.28	32.10	8.02
31.....	8.39	1.80	7.45	1.80	7.92	1.70	7.03	1.70	30.30	6.50	30.30	7.32
32.....	7.09	1.60	6.78	1.60	7.97	1.80	7.63	1.80	29.34	6.62	29.34	6.92
33.....	7.33	1.70	6.66	1.70	6.90	1.60	6.93	1.60	31.50	7.31	31.50	7.72
34.....	6.99	1.70	6.68	1.70	6.57	1.60	6.28	1.60	35.40	8.61	35.40	9.00
35.....	8.46	2.00	8.18	2.00	6.81	1.60	6.54	1.60	33.90	8.02	33.90	8.28
36.....	8.00	1.90	7.20	1.90	6.74	1.60	6.06	1.60	36.60	8.69	36.60	9.63
37.....	6.85	1.60	6.48	1.60	6.42	1.50	6.07	1.50	31.50	7.35	31.50	7.77
38.....	8.88	2.10	8.62	2.10	8.04	1.90	7.98	1.90	34.80	8.22	34.80	8.29
39.....	6.64	1.60	6.88	1.60	7.05	1.70	6.25	1.70	26.10	6.29	26.10	7.09
40.....	7.09	1.70	6.56	1.70	7.09	1.70	6.56	1.70	30.90	7.41	30.90	8.01
Total..	314.48	7.92	289.06	71.92	304.75	69.72	280.76	69.71	1243.12	283.80	1243.12	308.97
Average.	.7862	1.798	.7226	1.798	.7619	1.748	.7019	1.743	3.108	7.096	3.108	7.724

COST OF PRODUCTION.

113

OATS—TABLE XXXI, continued.

Cost of production and value of products of 400 acres of oats in 10 acre lots.

OFFICE NO.	WEAR AND TEAR.				TAXES.				OTHER EXPENSES.			
	Cost per acre and bushel.				Cost per acre and bushel.				Cost per acre and bushel.			
	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years
	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.
1.....	6.81	1.39	6.81	1.54	2.50	.51	2.50	.57	5.00	1.03	5.00	1.14
2.....	3.67	.89	3.67	1.96	2.50	.61	2.50	.66	5.00	1.23	5.00	1.33
3.....	6.85	1.73	6.85	1.98	2.50	.63	2.50	.73	5.00	1.27	5.00	1.45
4.....	4.90	1.18	4.90	1.33	2.50	.60	2.50	.67	5.00	1.20	5.00	1.34
5.....	5.20	1.13	5.20	1.17	2.50	.54	2.50	.56	5.00	1.08	5.00	1.13
6.....	5.00	1.11	5.00	1.13	2.50	.55	2.50	.56	5.00	1.11	5.00	1.13
7.....	6.83	1.57	6.83	1.66	2.50	.57	2.50	.61	5.00	1.15	5.00	1.22
8.....	4.00	.88	4.00	.97	2.50	.55	2.50	.60	5.00	1.10	5.00	1.20
9.....	4.65	1.03	4.65	1.03	2.50	.55	2.50	.55	5.00	1.10	5.00	1.10
10.....	4.65	.99	4.65	1.06	2.50	.53	2.50	.56	5.00	1.06	5.00	1.13
11.....	4.40	1.03	4.40	1.15	2.50	.59	2.50	.66	5.00	1.18	5.00	1.32
12.....	4.00	.98	4.00	1.05	2.50	.59	2.50	.65	5.00	1.18	5.00	1.30
13.....	4.50	.99	4.50	1.04	2.50	.55	2.50	.58	5.00	1.10	5.00	1.17
14.....	4.00	.98	4.00	1.01	2.50	.61	2.50	.63	5.00	1.23	5.00	1.27
15.....	2.70	.62	2.70	.69	2.50	.58	2.50	.65	5.00	1.16	5.00	1.30
16.....	4.48	1.01	4.48	1.10	2.50	.56	2.50	.62	5.00	1.12	5.00	1.24
17.....	5.60	1.25	5.60	1.37	2.50	.55	2.50	.61	5.00	1.11	5.00	1.22
18.....	3.96	.92	3.96	1.02	2.50	.56	2.50	.65	5.00	1.12	5.00	1.31
19.....	4.50	1.01	4.50	1.19	2.50	.55	2.50	.65	5.00	1.11	5.00	1.30
20.....	3.50	.78	3.50	.92	2.50	.56	2.50	.65	5.00	1.12	5.00	1.31
21.....	3.30	.69	3.30	.75	2.50	.52	2.50	.56	5.00	1.05	5.00	1.13
22.....	4.50	1.07	4.50	1.17	2.50	.59	2.50	.64	5.00	1.19	5.00	1.28
23.....	4.60	1.08	4.60	1.15	2.50	.59	2.50	.62	5.00	1.18	5.00	1.24
24.....	4.73	1.02	4.73	1.14	2.50	.54	2.50	.60	5.00	1.08	5.00	1.20
25.....	3.85	.93	3.85	.99	2.50	.60	2.50	.64	5.00	1.20	5.00	1.29
26.....	4.00	.91	4.00	1.03	2.50	.56	2.50	.63	5.00	1.13	5.00	1.27
27.....	5.37	1.09	5.37	1.22	2.50	.51	2.50	.57	5.00	1.03	5.00	1.15
28.....	4.00	.93	4.00	1.02	2.50	.58	2.50	.64	5.00	1.17	5.00	1.29
29.....	5.75	1.35	5.75	1.51	2.50	.58	2.50	.65	5.00	1.17	5.00	1.31
30.....	3.60	.81	3.60	.90	2.50	.56	2.50	.62	5.00	1.12	5.00	1.25
31.....	6.63	1.43	6.63	1.60	2.50	.53	2.50	.60	5.00	1.07	5.00	1.20
32.....	4.00	.90	4.00	.94	2.50	.56	2.50	.59	5.00	1.12	5.00	1.18
33.....	4.18	.97	4.18	1.02	2.50	.58	2.50	.61	5.00	1.16	5.00	1.22
34.....	5.72	1.39	5.72	1.46	2.50	.60	2.50	.63	5.00	1.20	5.00	1.27
35.....	5.50	1.30	5.50	1.34	2.50	.59	2.50	.61	5.00	1.18	5.00	1.22
36.....	5.13	1.21	5.13	1.35	2.50	.59	2.50	.65	5.00	1.19	5.00	1.31
37.....	4.87	1.14	4.87	1.20	2.50	.58	2.50	.61	5.00	1.16	5.00	1.23
38.....	3.74	.88	3.74	.89	2.50	.59	2.50	.59	5.00	1.18	5.00	1.18
39.....	3.57	.86	3.57	.98	2.50	.60	2.50	.67	5.00	1.20	5.00	1.35
40.....	4.60	1.11	4.60	1.19	2.50	.60	2.50	.64	5.00	1.20	5.00	1.29
Total....	185.84	42.54	185.84	46.22	100.00	22.79	100.00	24.79	200.00	45.74	200.00	49.78
Average.	.4646	1.063	.4646	1.155	.250	.569	.250	.619	.500	1.143	.500	1.244

OATS—TABLE XXXI, continued.

Cost of production and value of products of 400 acres of oats in 10 acre lots.

OFFICE NUMBER.	TOTAL COST OF RAISING PRODUCTS.				VALUE OF STRAW.				VALUE OF GRAIN.			
	<i>Total cost per acre and bushel.</i>				<i>Value per acre and bushel.</i>				<i>Value per acre and bushel.</i>			
	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years
\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	
1....	113.64	23.33	114.05	26.09	50.80	10.41	50.80	11.62	79.83	16.3	108.94	24.7
2....	104.46	25.47	105.16	27.74	42.00	10.24	42.00	11.08	66.42	16.2	88.30	23.3
3....	107.24	27.22	107.25	31.10	40.00	10.15	40.00	11.58	65.99	16.8	83.49	24.2
4....	115.71	27.82	115.80	31.29	45.00	10.81	45.00	12.16	74.04	17.8	89.54	24.2
5....	117.92	25.69	119.35	27.00	53.20	11.59	53.20	12.03	79.86	17.4	111.38	25.2
6....	112.24	25.05	114.69	26.00	45.00	10.04	45.00	10.20	74.36	16.6	119.07	27.
7....	110.43	25.33	112.07	27.25	49.50	11.35	49.50	12.04	75.86	17.4	109.32	26.6
8....	119.24	26.32	120.16	29.08	47.35	10.45	47.35	11.46	77.01	17.	108.20	26.2
9....	120.02	26.54	122.08	26.93	51.78	11.44	51.78	11.45	77.44	17.2	120.04	26.5
10....	115.26	24.53	116.46	26.47	47.05	10.01	47.05	16.95	79.90	17.	114.40	26.
11....	111.42	26.22	111.35	29.25	41.00	9.65	41.00	10.76	67.57	15.9	87.63	23.
12....	107.12	25.63	107.56	28.15	42.00	10.06	42.00	10.99	66.88	16.	88.24	23.1
13....	117.58	25.89	119.28	27.78	46.00	10.31	46.00	10.72	74.71	16.5	114.11	26.6
14....	105.52	25.92	107.13	27.02	44.00	10.81	44.00	11.11	67.96	16.7	100.98	25.5
15....	109.64	26.26	110.05	28.35	44.00	10.13	44.00	11.34	71.17	16.4	91.57	38.8
16....	104.51	23.50	105.10	25.95	44.00	9.88	44.00	10.86	80.54	18.1	106.11	26.2
17....	117.99	26.33	118.17	28.96	45.00	10.04	45.00	11.03	76.16	17.	97.51	23.9
18....	119.06	26.97	118.36	30.59	45.00	10.20	45.00	11.62	71.44	16.2	89.78	23.2
19....	113.20	25.27	112.16	29.36	43.00	9.62	43.00	11.26	75.71	16.9	88.62	23.2
20....	114.84	25.80	114.47	29.81	42.00	9.43	42.00	10.93	72.53	16.3	88.32	23.
21....	111.77	23.29	112.32	25.52	44.00	9.16	44.00	10.00	93.60	19.5	120.12	27.
22....	115.82	27.57	116.84	30.21	44.00	10.47	44.00	11.43	66.78	15.9	88.55	23.
23....	109.64	25.27	110.47	27.60	44.00	10.32	44.00	11.07	72.41	17.	92.00	23.
24....	121.04	26.03	121.76	29.34	51.35	11.43	51.35	12.37	76.26	16.3	112.88	27.2
25....	102.57	24.95	102.32	26.50	42.00	10.21	42.00	10.89	69.45	16.9	105.76	27.4
26....	111.53	25.35	112.45	28.75	42.00	9.54	42.00	10.74	70.40	16.	89.93	23.
27....	120.13	24.56	121.53	27.82	58.85	12.03	58.85	13.47	81.17	16.6	120.61	27.6
28....	116.78	27.41	117.09	30.02	43.00	10.09	43.00	11.02	68.16	16.	89.70	23.
29....	117.41	27.49	118.57	31.20	50.00	11.71	50.00	13.16	68.32	16.	87.40	23.
30....	111.11	25.19	111.71	27.92	45.95	10.42	45.95	11.49	75.41	17.1	98.80	24.7
31....	116.24	24.94	116.70	28.18	48.80	10.47	48.80	11.78	79.22	17.	104.32	25.2
32....	108.86	24.55	111.21	26.23	56.50	12.75	56.50	13.32	70.88	16.	118.72	28.
33....	112.57	26.11	114.14	27.93	50.70	11.76	50.70	12.42	74.99	17.4	104.44	25.6
34....	117.18	28.51	118.85	30.24	49.50	12.02	49.50	12.57	67.81	16.5	101.39	25.8
35....	117.46	27.75	119.31	29.17	49.60	11.72	49.60	12.12	69.79	16.5	108.38	26.5
36....	118.84	28.22	119.14	31.43	42.05	9.98	42.05	11.09	74.51	17.7	93.61	24.7
37....	109.40	25.56	110.88	27.37	49.80	11.63	49.80	12.29	73.62	17.2	105.30	26.
38....	112.70	26.64	115.15	27.41	50.30	11.89	50.30	11.97	72.76	17.2	112.14	26.7
39....	106.96	25.77	107.10	29.10	43.15	10.39	43.15	11.71	74.70	18.	91.26	24.8
40....	110.19	26.42	111.26	28.82	43.40	10.40	43.40	11.24	72.56	17.4	96.50	25.
Total	4525.24	1035.67	4559.05	1134.93	1856.63	425.00	1856.63	467.26	2947.73	674.0	4047.36	1017.6
Aver.	11.313	25.89	11.397	28.37	4.642	10.6	4.642	11.68	7.369	16.8	10.12	25.44

OATS—TABLE XXXI, continued.

Cost of production and value of products of 400 acres of oats in 10 acre lots.

OFFICE No.	TOTAL VALUE OF PRO- DUCT RAISED.				PROFIT.				LOSS.			
	Total value per acre and bushel.				Profit per acre and bushel.				Loss per acre and bushel.			
	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years
\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	
1.....	130.18	26.71	159.74	36.32	16.54	3.38	45.69	10.23	.....	.....	.....	.....
2.....	108.42	26.44	130.30	34.38	3.96	.97	25.14	6.64	.....	.....	.....	.....
3.....	105.99	26.95	123.49	35.78	.....	.....	16.24	4.68	1.25	.27	.....	.....
4.....	119.04	28.61	134.64	36.36	3.33	.79	18.74	5.07	.....	.....	.....	.....
5.....	133.06	28.99	164.58	37.23	15.14	3.30	45.23	10.23	.....	.....	.....	.....
6.....	119.36	26.64	164.07	37.20	7.12	1.59	49.38	11.20	.....	.....	.....	.....
7.....	125.36	28.75	158.82	38.64	14.93	3.42	46.75	11.39	.....	.....	.....	.....
8.....	124.36	27.45	155.55	37.66	5.12	1.13	35.39	8.58	.....	.....	.....	.....
9.....	129.22	28.64	171.82	37.95	9.20	2.10	49.74	11.02	.....	.....	.....	.....
10.....	126.95	27.01	161.46	42.95	11.69	2.48	44.99	16.48	.....	.....	.....	.....
11.....	108.57	25.55	128.63	33.76	.....	.....	17.28	4.51	2.85	.67	.....	.....
12.....	108.88	26.05	130.24	34.09	1.76	.42	22.68	5.94	.....	.....	.....	.....
13.....	120.71	28.81	160.11	37.32	3.13	.92	40.83	9.54	.....	.....	.....	.....
14.....	111.96	27.51	144.98	36.61	6.44	1.59	37.85	9.59	.....	.....	.....	.....
15.....	115.17	26.53	135.57	50.14	5.53	1.27	25.52	21.79	.....	.....	.....	.....
16.....	124.54	27.98	150.11	37.06	20.03	4.48	45.01	11.11	.....	.....	.....	.....
17.....	121.16	27.04	142.51	34.93	3.17	.71	24.34	5.97	.....	.....	.....	.....
18.....	116.44	26.40	134.78	34.82	.....	.....	16.42	4.23	2.62	.57	.....	.....
19.....	118.71	26.52	131.62	34.45	5.51	1.25	19.46	5.09	.....	.....	.....	.....
20.....	114.53	25.73	130.32	33.93	.....	.....	15.85	4.12	.31	.07	.....	.....
21.....	137.60	28.66	164.12	37.00	25.83	5.37	51.80	11.48	.....	.....	.....	.....
22.....	110.78	26.37	132.55	34.43	.....	.....	16.21	4.22	5.04	1.20	.....	.....
23.....	116.41	27.32	136.00	34.00	6.77	2.05	25.53	6.40	.....	.....	.....	.....
24.....	127.61	27.83	164.23	39.57	6.57	1.80	42.47	10.23	.....	.....	.....	.....
25.....	111.45	27.11	147.76	38.29	8.88	2.16	45.44	11.79	.....	.....	.....	.....
26.....	112.40	25.54	131.93	33.74	.87	.19	19.48	4.99	.....	.....	.....	.....
27.....	140.02	28.63	179.46	41.07	19.89	4.07	57.88	13.25	.....	.....	.....	.....
28.....	111.16	26.09	132.70	34.02	.....	.....	15.61	4.00	5.62	1.32	.....	.....
29.....	118.32	27.71	137.40	36.16	.91	.22	18.83	4.96	.....	.....	.....	.....
30.....	121.36	27.52	144.75	36.19	10.25	2.33	33.04	8.27	.....	.....	.....	.....
31.....	128.02	27.47	153.12	36.98	11.78	2.53	36.42	8.80	.....	.....	.....	.....
32.....	127.38	28.75	175.29	41.32	18.52	4.20	64.01	15.09	.....	.....	.....	.....
33.....	125.69	29.16	155.14	38.02	13.12	3.05	41.00	10.09	.....	.....	.....	.....
34.....	117.31	28.52	150.89	38.37	.13	.01	32.04	8.13	.....	.....	.....	.....
35.....	119.39	28.22	157.98	38.62	1.93	.47	38.67	9.45	.....	.....	.....	.....
36.....	116.56	27.68	135.66	35.79	.....	.....	16.52	4.36	2.28	.54	.....	.....
37.....	123.42	28.83	155.10	38.29	14.02	3.27	44.22	10.92	.....	.....	.....	.....
38.....	123.06	29.09	162.44	38.67	10.36	2.45	47.29	11.26	.....	.....	.....	.....
39.....	117.85	28.39	134.41	36.51	10.89	2.62	27.31	7.41	.....	.....	.....	.....
40.....	115.96	27.80	139.90	36.24	5.77	1.38	28.64	7.42	.....	.....	.....	.....
Total.	4804.36	1099.00	5903.99	1484.86	299.09	67.97	1344.94	349.93	19.97	4.64	.....	.....
Average	12.011	27.50	14.760	37.12	.748	1.699	3.362	8.75	.499	.116	.....	.....

TABLE XXXII.—SUMMARY OF TABLE XXXI.

In the tables on this page have been summarized the results in the foregoing table. The tables show the total cost of producing 400 acres of oats and the average cost per acre and bushel, the total value of products of 400 acres and the average value per acre and bushel. In the analysis of expenses wages was allowed for team work as well as for labor.

(For a more complete analysis of expenses in this case, both when wages is allowed for team work and when horses or their value is treated as capital, see the next two pages.)

1. *Cost of production.*

Items.	400 acres, 1898.	One acre.	Bush.	400 acres, 5 years.	One acre.	Bush.
	\$	\$	Cts.	\$	\$	Cts.
Plowing	430.89	1.077	2.47	430.89	1.077	2.69
Harrowing and seeding	235.46	.588	1.35	235.46	.588	1.47
Cutting	104.07	.260	.60	104.07	.260	.65
Fertilizing	1000.55	2.501	6.73	1000.55	2.501	6.24
Seed	167.93	.420	.96	251.15	.628	1.56
Shocking and stacking	238.15	.595	1.36	238.15	.595	1.43
Threshing	314.48	.787	1.80	289.06	.723	1.80
Marketing	304.75	.762	1.75	280.76	.702	1.74
Interest	1243.12	3.108	7.09	1243.12	3.108	7.72
Wear and tear	185.84	.465	1.07	185.84	.465	1.16
Taxes	100.00	.250	.57	100.00	.250	.62
Other expenses	200.00	.500	1.14	200.00	.500	1.24
	4525.24	11.313	25.89	4559.05	11.397	28.37

2. *Value of products.*

Value of grain	2947.73	7.369	16.80	4047.36	10.118	25.44
Value of straw	1856.63	4.642	10.60	1856.63	4.642	11.68
Total value	4804.36	12.011	27.40	5903.99	14.760	37.12

3. *Profit and loss.*

Profit	299.09	.7477	2.75	1344.94	3.362	8.76
Loss	19.97	.0499	1.16			
Balance profit	279.12	.6978	1.59	1344.94	3.362	8.76

TABLE XXXIII.—COST OF PRODUCTION AND VALUE OF 400 ACRES OF OATS.

The data upon which the calculations in the tables on this page are based may also be found in tables 24, 25, 26. "Cost of Production" is shown in Section 1. "Value of Products" is shown in Section 2. Section 3 shows the "Surplus Value or Cost," as the case may be. In Section 4 is presented the "Annual Investment" and the respective amounts of interest and necessary profit at 12 per cent. on same, and upon the value of the machinery used, and also the "Surplus Value" above the sum of these expenses. It should be noticed that in this presentation, wages has been allowed for team work in place of treating horses, or their value, as other capital.

1. Cost of production.

Items.	400	One	One
	acres.	acre.	Bush.
	\$	\$	Cts.
1 Plowing .....1812 hours at 24 cents	434.88	1.087	2.84
2 Harrowing, etc. 640 hours at 24 cents	153.60	.384	.99
3 Seeding 344 hours at 24 cents	82.56	.206	.54
4 Cutting 384 hours at 24 cents	92.16	.230	.60
5 Shocking 464 hours at 11.8 cents	54.75	.137	.36
6 Stacking, man and team..... 492 hours at 24 cents	118.08	.296	.77
7 Stacking, extra man 492 hours at 11.8 cents	58.06	.145	.37
8 Threshing, labor .....1162 hours at 11.8 cents	137.12	.344	.89
9 Threshing, machine .....15379 bush. at 1 cent	153.79	.385	1.00
10 Marketing .....1025 hours at 24 cents	246.00	.615	1.69
11 Seed .....1000 bush. at 35 cents	350.00	.875	2.27
12 Taxes 400 acres at 26 cents	104.00	.260	.68
13 Fertilizers, clover and .....1000 loads manure....	400.00	1.000	2.60
14 Other expenses 400 acres at 50 cents	200.00	.500	1.30
15 Depreciation, machinery.....1860.00 dollars at 10 per cent.	186.00	.465	1.21
Annual investment	2771.00	6.928	18.01
16 Interest, machinery 1860.00 dollars at 6 per cent.	111.60	.279	.72
17 Interest, an. investment 2771.00 dollars at 6 per cent.	166.26	.415	1.08
18 Interest, land .....16880.00 dollars at 6 per cent.	1012.80	2.532	6.58
Total	4061.66	10.154	26.39

Total investment, \$21,511.00. Average investment per acre, \$53.78. Team work, 469.7 days. Labor, 681.5 days. Value per acre of land, \$42.20.

2. Value of products.

1 15379 bushels oats at 24.5 cents, av. 6 yrs.....	3767.85	9.419	24.50
2 400 acres straw at \$2.30	920.00	2.300	5.97
	4687.85	11.719	30.47

3. Surplus value.

Value above cost. (profit).....	626.19	1.565	4.08
---------------------------------	--------	-------	------

Equivalent to 2.89 per cent. on capital invested.

Part IV.—Annual investment, interest and necessary profit at 12 per cent. on same and upon the value of machinery used; also the surplus value of the products above the sum of these expenses. This surplus if credited to land and capitalized at 12 per cent. gives the value of the land for raising oats.

Annual investment	2771.00	6.928	18.01
Machinery .....\$1,860.00 at 12 per cent.	223.20	.558	1.44
Annual investment 2,771.00 at 12 per cent.	332.52	.831	2.17
Total expenses less rent.....	3326.72	8.317	21.62
* Surplus credited to land.....	1361.13	3.402	8.85
Total	4687.85	11.719	30.47

* Capitalized at 12 per cent. equivalent to \$11,342.92 or \$28.35 per acre. This is \$13.85 per acre below the value reported by the farmers.

TABLE XXXIV.—COST OF PRODUCTION AND VALUE OF 400 ACRES OF OATS.

The data upon which the calculations in the table on this page are based may also be found in tables 24, 25, 26. "Cost of Production" is shown in Section 1. "Value of Products" is shown in Section 2. Section 3 shows the "Surplus Value" above cost. In Section 4 is shown the "Annual Investment" and the respective amounts of interest and the necessary profit at 12 per cent. on same and upon the value of machinery and horses used, also the surplus value of these expenses. In this presentation horses, or their value, have been treated as other capital.

1. Cost of production.

Items.	400 acres.	One acre.	One Bush.
1 Plowing 1812 hours at 11.8 cents	\$ 213.81	\$.534	Cts. 1.39
2 Harrowing, etc. 640 hours at 11.8 cents	75.52	.189	.49
3 Seeding 344 hours at 11.8 cents	40.59	.101	.26
4 Cutting 384 hours at 11.8 cents	45.23	.113	.29
6 Shocking 464 hours at 11.8 cents	54.75	.137	.36
6 Stacking 984 hours at 11.8 cents	116.12	.290	.76
7 Threshing, labor 1162 hours at 11.8 cents	137.12	.343	.89
8 Threshing, machine 15379 bush. at 1 cent	153.79	.385	1.00
9 Marketing 1025 hours at 11.8 cents	120.95	.302	.79
10 Seed 1000 bush. at 35 cents	350.00	.875	2.27
11 Taxes 400 acres at 28 cents	104.00	.260	.68
12 Maintenance horses 400 acres at 92 cents	368.00	.920	2.40
13 Fertilizing, clover and 1000 loads manure....	400.00	1.000	2.60
14 Other expenses 400 acres at 50 cents	200.00	.500	1.30
15 Depreciation, machinery 1860.00 dollars at 10 per cent.	186.00	.465	1.21
16 Depreciation, horses 584.00 dollars at 10 per cent.	58.40	.146	.38
Annual investment	2624.38	6.560	17.07
17 Interest, machinery 1860.00 dollars at 6 per cent.	111.60	.279	.72
18 Interest, horses 584.00 dollars at 6 per cent.	35.00	.088	.23
19 Interest, an. investment 2624.38 dollars at 6 per cent.	157.46	.394	1.02
20 Interest, land 16880.00 dollars at 6 per cent.	1012.80	2.532	6.58
Total	3941.24	9.853	25.62

Total investment, \$21,948.38 Average investment per acre, \$54.87. Team work, 516.1 days. Labor, 681.5 days. Value per acre of land, \$42.20.

2. Value of products.

1 15379 bushels oats at 24.5 cents, av. 6 yrs.....	3767.85	9.419	24.50
2 400 acres straw, \$2.30.....	920.00	2.300	5.90
Total	4687.85	11.719	30.40

3. Surplus value.

1 Value above costs (profit).....	746.61	1.866	4.80
-----------------------------------	--------	-------	------

Equivalent to 3.42 per cent. on capital invested.

Part IV.—Annual investment, interest and necessary profit at 12 per cent. on same and upon the value of machinery and horses used; also the surplus value of the products above the sum of these expenses. This surplus if credited to land and capitalized at 12 per cent. gives the value of the land for raising oats.

Annual investment	2624.38	6.560	17.07
Machinery \$1,860.00 at 12 per cent.	223.20	.568	1.44
Horses 584.00 at 12 per cent.	70.00	.176	.46
Annual investment 2,624.38 at 12 per cent.	314.92	.788	2.05
Total expenses less rent.....	3232.50	8.081	21.01
* Surplus credited to land	1455.35	3.638	9.46
Total	4687.85	11.719	30.47

*Capitalized at 12 per cent. equivalent to \$12,127.25 or \$30.32 per acre. This is \$11.88 per acre below the value reported by the farmers.

In relation to the cost of producing 400 acres of oats as presented in the four preceding tables it is, perhaps, proper to repeat here a few facts to which attention has already been called.

In table XXXI, covering six pages, the cost per each acre in detail, the total cost of 400 acres and the average cost per acre are presented. Table XXXII is made up of the totals of table XXXI. Table XXXIII is a more complete analysis of table XXXI, including beside the expenses in that table, interest on the value of the machinery used and upon the sum of the annual investments. These items of expenses were added because they rest on the value of the machinery used and upon the sum of the annual investments. These items of expenses were added because they are unavoidable in farming and constitute a proper charge against the products.

It should be noticed that in these three tables the expenses in farming arising from the use of horses for motor power was arrived at by allowing wages, at ruling rates in the respective localities, for team work. It appeared, however, that this is not the proper way in which to treat expenses of this nature. Work horses are usually regarded as capital invested. This being the case, expenses from this source are with a few exceptions similar to the expenses of other capital used and should, therefore, be treated accordingly. Another analysis of the cost of production was therefore made, in which the expenses arising from the horses used were treated from this point of view. This analysis is presented in table XXXIV, and includes in the expenses, wages for man's labor only, while for horses, depreciation and interest on their value and actual yearly cost, per acre, of their maintenance was allowed as expense. This method of treating expenses of this kind does not greatly affect the total cost, but is undoubtedly proper, at least in most cases.

The average cost per acre and bushel of growing oats as computed from table XXXI is shown below:

Items.	One acre.	One Bush.
	\$	Cts.
Plowing .....	.534	1.39
Harrowing, etc. ....	.189	.49
Seeding .....	.101	.26
Cutting .....	.113	.29
Shocking .....	.137	.36
Stacking .....	.290	.76
Threshing, labor .....	.343	.89
Threshing, machine .....	.385	1.00
Marketing .....	.302	.79
Seed .....	.875	2.27
Taxes .....	.260	.68
Maintenance horses .....	.920	2.40
Fertilizing	1.000	2.60
Other expenses .....	.500	1.30
Depreciation, machinery .....	.465	1.21
Depreciation, horses .....	.146	.38
Annual investment	6.560	17.07
Interest, machinery .....	.279	.72
Interest, horses .....	.088	.23
Interest, annual investment .....	.394	1.02
Interest, laid	2.532	6.58
Total	9.853	25.62

RYE—TABLE XXXV.

Cost of production and value of products of 400 acres of rye in 10 acre lots.

OFFICE No.	PLOWING.				HARROWING AND SEEDING.				CUTTING.			
	Cost per acre and bushel.				Cost per acre and bushel.				Cost per acre and bushel.			
	Acres 1896 \$	Bush 1896 Cts.	Acres 5 years \$	Bush 5 years Cts.	Acres 1896 \$	Bush 1896 Cts.	Acres 5 years \$	Bush 5 years Cts.	Acres 1896 \$	Bush 1896 Cts.	Acres 5 years \$	Bush 5 years Cts.
1.....	8.72	4.13	8.72	4.49	5.56	2.64	5.56	2.86	2.35	1.12	2.35	1.22
2.....	10.74	5.37	10.74	5.90	5.68	2.84	5.68	3.13	2.42	1.21	2.42	1.32
3.....	10.41	5.72	10.41	6.23	6.54	3.58	6.54	3.91	2.47	1.36	2.47	1.47
4.....	11.84	5.98	11.84	7.01	6.96	3.52	6.96	4.12	2.62	1.32	2.62	1.65
5.....	11.01	6.22	11.01	6.51	5.80	3.28	5.80	3.43	2.37	1.33	2.37	1.40
6.....	11.28	5.45	11.28	6.37	5.81	2.81	5.81	2.77	2.80	1.35	2.80	1.34
7.....	9.61	4.33	9.51	4.64	5.44	2.50	5.44	2.65	2.28	1.05	2.28	1.11
8.....	10.75	5.27	10.75	5.83	7.06	3.46	7.06	3.83	2.72	1.33	2.72	1.48
9.....	10.21	5.08	10.21	6.01	5.95	2.96	5.95	3.50	2.66	1.27	2.66	1.56
10.....	9.67	4.26	9.67	4.72	5.64	2.48	5.64	2.76	2.55	1.12	2.55	1.23
11.....	10.56	5.42	10.56	6.14	5.32	2.73	5.32	3.09	2.70	1.39	2.70	1.57
12.....	11.25	5.68	11.25	6.25	5.58	2.82	5.58	3.10	2.53	1.28	2.53	1.41
13.....	10.20	5.39	10.20	5.08	6.40	3.40	6.40	3.19	2.75	1.46	2.75	1.37
14.....	10.32	5.38	10.32	5.34	5.40	2.82	5.40	2.80	2.29	1.19	2.29	1.14
15.....	11.05	5.55	11.05	6.12	5.85	2.94	5.85	3.20	2.77	1.39	2.77	1.52
16.....	9.67	4.12	9.67	4.65	4.96	2.11	4.96	2.38	2.29	.98	2.29	1.10
17.....	13.14	7.10	13.14	7.97	6.20	3.36	6.20	3.76	2.99	1.61	2.99	1.80
18.....	10.79	5.39	10.79	5.99	6.72	3.36	6.72	3.73	2.42	1.21	2.42	1.34
19.....	11.85	5.66	11.85	6.23	6.17	2.96	6.17	3.24	2.80	1.34	2.80	1.47
20.....	11.36	5.64	11.36	6.32	5.85	2.91	5.85	3.25	2.77	1.38	2.77	1.54
21.....	11.44	5.18	11.44	5.29	5.04	2.28	5.04	2.34	2.57	1.16	2.57	1.10
22.....	11.85	5.93	11.85	6.59	6.30	3.16	6.30	3.50	2.65	1.33	2.65	1.47
23.....	11.90	6.95	11.90	6.61	6.40	3.19	6.40	3.55	2.62	1.31	2.62	1.45
24.....	10.46	5.33	10.46	5.23	4.99	2.55	4.99	2.49	2.39	1.22	2.39	1.20
25.....	9.98	5.43	9.98	5.31	5.22	2.84	5.22	2.77	2.59	1.42	2.59	1.39
26.....	10.71	5.35	10.71	5.95	5.75	2.88	5.75	3.18	2.52	1.26	2.52	1.40
27.....	10.10	4.83	10.10	4.98	5.51	2.64	5.51	2.72	2.55	1.22	2.55	1.25
28.....	11.02	5.40	11.02	6.06	6.37	3.13	6.37	3.50	2.72	1.34	2.72	1.49
29.....	10.12	4.93	10.12	5.62	6.03	2.95	6.03	3.33	2.77	1.35	2.77	1.53
30.....	11.28	5.48	11.28	6.00	6.34	3.08	6.34	3.37	2.40	1.17	2.40	1.27
31.....	11.33	5.86	11.33	6.33	6.38	3.30	6.38	3.56	2.50	1.30	2.50	1.40
32.....	10.32	5.32	10.32	5.01	5.21	2.69	5.21	2.54	2.67	1.37	2.67	1.29
33.....	10.87	4.59	10.87	5.18	6.50	2.75	6.50	3.09	2.75	1.16	2.75	1.31
34.....	11.97	6.50	11.97	6.85	5.85	3.17	5.85	3.35	2.66	1.44	2.66	1.52
35.....	11.42	5.79	11.42	5.74	5.60	2.85	5.60	2.81	2.84	1.45	2.84	1.43
36.....	11.16	6.42	11.16	6.85	6.20	3.57	6.20	3.80	2.80	1.61	2.80	1.72
37.....	10.32	5.04	10.32	5.38	5.13	2.50	5.13	2.67	2.50	1.22	2.50	1.30
38.....	10.81	5.06	10.81	5.32	5.40	2.54	5.40	2.67	2.64	1.24	2.64	1.30
39.....	10.24	5.39	10.24	6.09	6.86	3.61	6.86	4.10	2.95	1.56	2.95	1.76
40.....	9.26	4.88	9.26	5.29	5.49	2.89	5.49	3.14	2.34	1.24	2.34	1.34
Total.....	430.89	215.85	430.89	232.48	235.46	118.05	235.46	127.18	103.98	52.06	103.98	55.97
Average.	1.077	5.396	1.077	5.812	.5886	2.951	.5886	3.179	.2599	1.301	.2599	1.399

RYE—TABLE XXXV, continued.

Cost of production and value of products of 400 acres of rye in 10 acre lots.

OFFICE NO.	FERTILIZING.				SEED.				SHOCKING AND STACKING.			
	Cost per acre and bushel.				Cost per acre and bushel.				Cost per acre and bushel.			
	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896 Cts.	Acre 5 years	Bush 5 years
	\$	Cts	\$	Cts.	\$	Cts.	\$	Cts.	\$		\$	Cts.
1.....	15.00	7.11	15.00	7.73	5.34	2.54	7.05	3.63	5.58	2.64	5.58	2.88
2.....	15.00	7.50	15.00	8.25	5.62	2.81	7.66	4.21	5.36	2.68	5.36	2.94
3.....	15.00	8.25	15.00	8.98	4.66	2.56	6.78	4.06	4.56	2.52	4.56	2.73
4.....	15.00	7.59	15.00	8.87	5.06	2.55	6.72	3.94	6.13	3.09	6.13	3.62
5.....	15.75	8.89	15.75	9.32	5.64	3.19	7.54	4.45	5.57	3.16	5.57	3.29
6.....	15.00	7.25	15.00	7.14	5.94	2.88	8.37	3.98	6.56	3.18	6.56	3.12
7.....	15.00	6.91	15.00	7.32	4.93	2.28	6.67	3.25	4.71	2.17	4.71	2.30
8.....	15.50	7.60	15.50	8.43	5.52	2.71	7.65	4.15	5.86	2.87	5.86	3.18
9.....	15.50	7.71	15.50	9.12	5.97	2.97	7.82	4.60	6.51	3.23	6.51	3.33
10.....	15.10	6.65	15.10	7.36	7.12	3.14	9.36	4.56	5.45	2.40	6.45	2.67
11.....	15.00	7.70	15.00	8.72	5.51	2.82	7.42	4.32	6.09	3.12	6.09	3.54
12.....	15.00	7.58	15.00	8.33	5.41	2.74	7.42	4.13	5.50	2.78	5.50	3.06
13.....	15.00	7.94	15.00	7.47	6.10	3.23	8.67	4.32	6.25	3.30	6.25	3.11
14.....	15.00	7.82	15.00	7.78	5.44	2.83	7.99	4.15	5.35	2.78	5.35	2.77
15.....	15.00	7.53	15.00	8.24	5.66	2.84	7.77	4.27	6.48	3.25	6.48	3.57
16.....	15.00	6.41	15.00	7.22	5.19	2.22	7.18	3.45	4.28	1.83	4.28	2.26
17.....	15.00	8.11	15.00	9.09	5.49	2.96	7.20	4.36	7.08	3.83	7.08	4.09
18.....	15.00	7.50	15.00	8.33	5.85	2.93	7.96	4.42	6.10	3.05	6.10	3.39
19.....	15.00	7.18	15.00	7.93	5.17	2.48	7.26	3.82	7.40	3.55	7.40	3.39
20.....	15.00	7.47	15.00	8.34	4.45	2.22	6.08	3.38	6.06	3.02	6.06	3.37
21.....	15.00	6.79	15.00	6.94	5.95	2.69	8.33	3.86	5.38	2.44	5.38	2.49
22.....	15.00	7.50	15.00	8.34	5.79	2.90	7.88	4.38	6.63	3.32	6.63	3.69
23.....	15.00	7.50	15.00	8.33	6.65	3.33	8.55	4.76	6.79	3.39	6.79	3.77
24.....	15.00	7.65	15.00	7.50	6.12	3.12	8.61	4.25	5.78	2.95	5.78	2.89
25.....	15.00	8.15	15.00	7.98	5.16	2.80	7.02	3.73	6.31	3.44	6.31	3.35
26.....	15.00	7.50	15.00	8.33	6.38	3.19	9.00	5.00	5.27	2.63	5.27	2.93
27.....	15.55	7.44	15.55	7.66	5.60	2.68	7.63	3.75	5.76	2.75	5.76	2.83
28.....	15.00	7.35	15.00	8.24	5.85	2.87	7.20	3.96	6.62	3.24	6.62	3.63
29.....	25.00	12.19	25.00	13.88	6.07	2.96	8.43	4.68	6.74	3.28	6.74	3.78
30.....	15.00	7.29	15.00	7.98	5.70	2.77	7.90	4.20	5.38	2.62	5.38	2.86
31.....	15.00	7.77	15.00	8.38	5.55	2.88	7.36	4.11	6.08	3.15	6.08	3.39
32.....	15.40	7.95	15.40	7.48	5.39	2.78	7.56	3.68	5.66	2.91	5.66	2.74
33.....	15.00	6.33	15.00	7.15	5.71	2.41	8.05	3.83	5.84	2.04	5.84	2.78
34.....	15.00	8.15	15.00	8.57	5.24	2.84	7.35	4.20	5.40	2.93	5.40	3.08
35.....	15.20	7.72	15.20	7.64	6.19	3.14	8.17	4.11	7.12	3.62	7.12	3.57
36.....	15.00	8.62	15.00	9.21	5.53	3.18	7.09	4.35	6.10	3.50	6.10	3.73
37.....	15.50	7.56	15.50	8.07	5.81	2.34	8.11	4.22	5.91	2.89	5.91	3.08
38.....	15.25	7.12	15.25	7.52	5.85	2.74	7.65	3.76	6.45	3.01	6.45	3.18
39.....	15.00	7.90	15.00	8.93	5.36	2.82	7.36	4.38	6.20	3.26	6.20	3.69
40.....	15.50	8.16	15.50	8.87	5.22	2.75	6.90	3.94	5.85	3.08	5.85	3.34
Total.....	614.25	307.34	614.25	330.96	225.19	112.09	306.62	164.63	238.15	118.90	238.15	128.41
Average.	1.536	7.683	1.536	8.274	.5629	2.802	.7665	4.116	.5954	2.972	.5954	3.210

RYE—TABLE XXXV, continued.

Cost of production and value of products of 400 acres of rye in 10 acre lots.

OFFICE NO.	THRESHING.				MARKETING.				INTEREST.			
	Cost per acre and bushel.				Cost per acre and bushel.				Cost per acre and bushel.			
	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years
\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	
1.....	6.33	3.00	5.82	3.00	5.70	2.70	5.23	2.70	30.60	14.50	30.60	15.77
2.....	5.20	2.60	4.73	2.60	4.80	2.40	4.36	2.40	26.10	13.05	26.10	14.34
3.....	4.73	2.59	4.34	2.59	5.64	3.09	5.17	3.09	26.70	14.67	26.70	15.98
4.....	5.34	2.70	4.56	2.70	6.33	3.20	5.40	3.20	31.30	15.81	31.30	18.52
5.....	4.07	2.30	3.88	2.30	4.60	2.60	4.39	2.60	37.20	21.02	37.20	22.02
6.....	4.14	2.00	4.20	2.00	3.93	1.90	3.99	1.90	31.08	15.01	31.08	14.80
7.....	5.86	2.70	5.54	2.70	5.21	2.40	4.92	2.40	30.60	14.10	30.60	14.93
8.....	4.90	2.40	4.42	2.40	5.30	2.60	4.78	2.60	33.00	16.18	33.00	17.93
9.....	5.23	2.60	4.42	2.60	6.63	3.30	5.61	3.30	33.60	16.71	33.60	19.76
10.....	6.35	2.80	5.74	2.80	5.45	2.40	4.92	2.40	33.30	14.67	33.30	16.23
11.....	4.87	2.44	4.30	2.50	5.06	2.60	4.64	2.69	29.40	15.08	29.40	17.09
12.....	4.75	2.40	4.32	2.40	5.14	2.60	4.68	2.60	27.30	13.77	27.30	15.17
13.....	4.91	2.59	5.22	2.59	4.53	2.39	4.82	2.39	33.90	17.93	33.90	16.86
14.....	5.37	2.79	5.40	2.79	3.84	2.00	3.86	2.00	28.08	14.62	28.08	14.56
15.....	5.17	2.64	4.73	2.59	4.18	2.10	3.82	2.09	30.66	15.40	30.66	16.84
16.....	6.31	2.70	5.62	2.70	5.85	2.50	5.20	2.50	25.80	11.03	25.80	12.40
17.....	4.62	2.50	4.12	2.50	5.73	3.10	5.11	3.10	30.90	16.70	30.90	18.73
18.....	4.60	2.30	4.14	2.30	6.80	3.40	6.10	3.40	33.00	16.50	33.00	18.33
19.....	5.64	2.70	5.13	2.70	5.85	2.80	5.32	2.80	27.60	13.20	27.60	14.52
20.....	4.42	2.20	3.96	2.20	5.22	2.60	4.68	2.60	33.00	16.41	33.00	18.34
21.....	5.52	2.50	5.40	2.50	4.42	2.00	4.32	2.00	31.02	14.03	31.02	14.37
22.....	4.40	2.20	3.96	2.20	5.00	2.50	4.50	2.50	32.70	16.32	32.70	18.16
23.....	4.80	2.40	4.32	2.40	5.60	2.80	5.04	2.80	24.48	12.24	24.48	13.60
24.....	5.68	2.90	5.80	2.90	4.90	2.50	5.00	2.50	36.90	18.82	36.90	18.45
25.....	4.96	2.69	5.07	2.69	5.52	3.00	5.64	3.00	22.98	12.49	22.98	12.22
26.....	4.20	2.10	3.78	2.10	6.00	3.00	5.40	3.00	31.50	15.75	31.50	17.50
27.....	4.81	2.30	4.66	2.30	4.51	2.20	4.22	2.20	35.28	16.89	35.28	17.38
28.....	4.69	2.30	4.18	2.30	6.53	3.20	5.82	3.20	31.50	15.44	31.50	17.31
29.....	5.33	2.60	4.68	2.60	6.76	3.30	5.94	3.30	30.90	15.07	30.90	17.16
30.....	4.94	2.40	4.51	2.40	6.59	3.20	6.01	3.20	32.10	15.59	32.10	17.07
31.....	5.01	2.60	4.65	2.60	4.82	2.50	4.47	2.50	30.30	15.69	30.30	16.92
32.....	5.24	2.70	5.56	2.70	4.65	2.40	4.94	2.40	29.84	15.13	29.84	14.24
33.....	6.64	2.80	5.88	2.80	6.87	3.90	6.09	2.90	31.50	13.29	31.50	15.00
34.....	4.60	2.50	4.37	2.50	4.60	2.50	4.37	2.50	35.40	19.24	35.40	20.22
35.....	4.73	2.40	4.77	2.40	4.92	2.50	4.97	2.50	33.90	17.21	33.90	17.03
36.....	4.52	2.60	4.23	2.60	4.87	2.80	4.56	2.80	36.60	21.04	36.60	22.45
37.....	5.53	2.70	5.18	2.70	4.51	2.20	4.22	2.20	31.50	15.36	31.50	16.40
38.....	6.21	2.90	5.88	2.90	6.63	3.10	6.29	3.10	34.80	16.26	34.80	17.14
39.....	4.18	2.20	3.69	2.20	4.94	2.60	4.36	2.60	26.10	13.73	26.10	15.54
40.....	5.32	2.80	4.90	2.80	4.95	2.60	4.55	2.60	30.90	16.26	30.90	17.66
Total	204.12	101.54	190.06	101.55	213.05	106.28	197.55	106.36	1242.8	622.21	1242.8	668.94
Average..	.5103	2.538	.4751	2.538	.5326	2.657	.4939	2.659	3.107	15.55	3.107	16.73

RYE—TABLE XXXV, continued.

Cost of production and value of products of 400 acres of rye in 10 acre lots.

OFFICE NO.	WEAR AND TEAR.				TAXES.				OTHER EXPENSES.			
	Cost per acre and bushel.				Cost per acre and bushel.				Cost per acre and bushel.			
	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years
	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.
1.....	6.81	3.23	6.81	3.51	2.50	1.18	2.50	1.29	5.00	2.37	5.00	2.53
2.....	3.67	1.83	3.67	2.01	2.50	1.25	2.50	1.37	5.00	2.50	5.00	2.75
3.....	6.85	3.76	6.85	4.10	2.50	1.36	2.50	1.49	5.00	2.77	5.00	2.98
4.....	4.90	2.47	4.90	2.90	2.50	1.26	2.50	1.48	5.00	2.52	5.00	2.96
5.....	5.20	2.93	5.20	3.08	2.50	1.41	2.50	1.48	5.00	2.82	5.00	2.96
6.....	5.00	2.41	5.00	2.38	2.50	1.20	2.50	1.19	5.00	2.40	5.00	2.38
7.....	6.83	3.15	6.83	3.33	2.50	1.15	2.00	1.22	5.00	2.31	5.00	2.44
8.....	4.00	1.96	4.00	2.17	2.50	1.22	2.50	1.35	5.00	2.45	5.00	2.71
9.....	4.65	2.31	4.65	2.74	2.50	1.25	2.50	1.47	5.00	2.50	5.00	2.94
10.....	4.65	2.06	4.65	2.28	2.50	1.10	2.50	1.22	5.00	2.20	5.00	2.44
11.....	4.40	2.26	4.40	2.56	2.50	1.29	2.50	1.46	5.00	2.58	5.00	2.92
12.....	4.00	2.02	4.00	2.23	2.50	1.26	2.50	1.39	5.00	2.52	5.00	2.78
13.....	4.50	2.38	4.50	2.23	2.50	1.32	2.50	1.24	5.00	2.65	5.00	2.49
14.....	4.00	2.08	4.00	2.07	2.50	1.30	2.50	1.29	5.00	2.61	5.00	2.74
15.....	2.70	1.35	2.70	1.48	2.50	1.25	2.50	1.37	5.00	2.50	5.00	2.59
16.....	4.48	1.91	4.48	2.16	2.50	1.07	2.50	1.20	5.00	2.14	5.00	2.40
17.....	5.60	3.03	5.60	3.39	2.50	1.35	2.50	1.52	5.00	2.70	5.00	3.04
18.....	3.96	1.98	3.96	2.20	2.50	1.25	2.50	1.39	5.00	2.50	5.00	2.79
19.....	4.50	2.15	4.50	2.37	2.50	1.19	2.50	1.31	5.00	2.38	5.00	2.63
20.....	3.50	1.74	3.50	1.93	2.50	1.24	2.50	1.38	5.00	2.48	5.00	2.77
21.....	3.30	1.49	3.30	1.53	2.50	1.13	2.50	1.15	5.00	2.26	5.00	2.31
22.....	4.50	2.25	4.50	2.50	2.50	1.25	2.50	1.38	5.00	2.50	5.00	2.77
23.....	4.60	2.30	4.60	2.55	2.50	1.25	2.50	1.39	5.00	2.50	5.00	2.78
24.....	4.73	2.41	4.73	2.37	2.50	1.27	2.50	1.25	5.00	2.54	5.00	2.50
25.....	3.85	2.09	3.85	2.04	2.50	1.35	2.50	1.33	5.00	2.71	5.00	2.67
26.....	4.00	2.00	4.00	2.22	2.50	1.25	2.50	1.39	5.00	2.50	5.00	2.79
27.....	5.37	2.57	5.37	2.64	2.50	1.19	2.50	1.23	5.00	2.39	5.00	2.47
28.....	4.00	1.96	4.00	2.19	2.50	1.22	2.50	1.37	5.00	2.45	5.00	2.75
29.....	3.75	2.80	5.75	3.19	2.50	1.22	2.50	1.39	5.00	2.45	5.00	2.79
30.....	3.60	1.75	3.60	1.92	2.50	1.21	2.50	1.33	5.00	2.43	5.00	2.66
31.....	6.63	3.43	6.63	3.70	2.50	1.30	2.50	1.40	5.00	2.60	5.00	2.80
32.....	4.00	2.06	4.00	1.94	2.50	1.28	2.50	1.21	5.00	2.57	5.00	2.42
33.....	4.18	1.76	4.18	1.99	2.50	1.05	2.50	1.19	5.00	2.11	5.00	2.38
34.....	5.72	3.11	5.72	3.27	2.50	1.35	2.50	1.42	5.00	2.70	5.00	2.95
35.....	5.50	2.79	5.50	2.77	2.50	1.26	2.50	1.25	5.00	2.52	5.00	2.51
38.....	3.74	1.74	3.74	1.84	2.50	1.43	2.50	1.53	5.00	2.87	5.00	3.07
36.....	5.13	2.94	5.13	3.14	2.50	1.22	2.50	1.30	5.00	2.44	5.00	2.60
37.....	4.87	2.37	4.87	2.53	2.50	1.16	2.50	1.23	5.00	2.33	5.00	2.46
39.....	3.57	1.87	3.57	2.13	2.50	1.32	2.50	1.48	5.00	2.63	5.00	2.96
40.....	4.60	2.42	4.60	2.63	2.50	1.31	2.50	1.42	5.00	2.62	5.00	2.85
Total.....	185.84	93.12	185.84	100.21	100.00	49.92	100.00	53.75	200.00	100.02	200.00	107.68
Average..	.4646	2.328	.4646	2.505	.250	1.248	.250	1.344	.500	2.500	.500	2.692

RYE—TABLE XXXV, continued.

Cost of production and value of products of 400 acres of rye in 10 acre lots.

OFFICE NUMBER.	TOTAL COST OF RAISING PRODUCTS.				VALUE OF STRAW.				VALUE OF GRAIN.			
	Total cost per acre and bushel.				Value per acre and bushel.				Value per acre and bushel.			
	Acre 1896 \$	Bush 1896 Cts.	Acre 5 years \$	Bush 5 years Cts.	Acre 1896 \$	Bush 1896 Cts.	Acre 5 years \$	Bush 5 years Cts.	Acre 1896 \$	Bush 1896 Cts.	Acre 5 years \$	Bush 5 years Cts.
1....	99.49	47.16	100.22	51.66	35.40	16.78	35.40	18.24	72.79	34.50	88.65	45.70
2....	92.09	46.04	93.22	51.22	27.00	13.50	27.00	14.83	66.20	33.10	82.08	45.10
3....	95.06	52.23	96.32	57.61	24.00	13.18	24.00	14.37	60.60	33.30	80.82	48.40
4....	102.98	52.01	102.93	60.90	28.00	14.14	28.00	16.56	65.73	33.20	73.42	44.10
5....	104.71	59.15	106.21	62.84	27.95	15.79	27.95	16.53	60.53	34.20	77.23	45.70
6....	99.04	47.84	101.59	48.37	33.00	15.94	33.00	15.71	68.31	33.00	97.65	46.50
7....	97.87	45.10	99.00	48.29	31.00	14.29	31.00	15.12	73.78	34.00	94.30	46.00
8....	102.11	50.05	103.24	56.06	30.80	15.09	30.80	16.74	70.38	34.50	87.95	47.80
9....	104.41	51.89	104.43	61.43	26.07	12.97	26.07	15.34	68.54	34.10	81.09	47.70
10....	102.78	45.28	103.88	50.67	32.55	14.34	32.55	15.88	80.81	35.60	95.94	46.80
11....	96.41	49.43	97.33	56.60	28.00	14.36	28.00	16.27	65.13	33.40	97.40	45.00
12....	93.96	47.45	95.00	52.85	30.00	14.29	30.00	16.66	64.94	32.80	81.00	45.00
13....	102.04	53.98	105.21	42.34	30.00	15.87	30.00	14.92	64.07	33.90	96.88	48.20
14....	92.59	48.22	95.19	49.28	31.00	16.14	31.00	16.09	61.44	32.00	90.72	47.00
15....	97.02	48.74	98.33	54.03	29.00	14.57	29.00	15.93	66.27	33.33	83.17	45.70
16....	91.33	39.02	91.98	44.22	32.00	13.67	32.00	15.38	80.96	34.60	99.63	47.90
17....	104.25	56.35	104.84	63.55	28.00	15.13	28.00	16.98	63.45	34.30	74.25	45.00
18....	102.74	51.37	103.69	57.61	34.00	17.00	34.00	18.88	66.20	33.10	81.00	45.00
19....	99.48	47.59	100.53	52.91	32.00	15.31	32.00	16.84	67.51	32.30	85.50	45.00
20....	99.13	49.31	99.76	55.42	32.00	15.59	32.00	17.77	66.33	33.00	81.00	45.00
21....	97.14	43.95	99.30	45.97	33.00	14.93	33.00	15.27	77.35	35.00	105.84	49.00
22....	102.32	51.16	103.47	57.48	30.00	15.00	30.00	16.66	66.20	33.10	81.00	46.00
23....	96.34	48.16	97.20	54.00	27.00	13.50	27.00	15.00	70.00	35.00	81.00	45.00
24....	104.45	53.26	107.06	53.53	31.50	16.07	31.50	15.75	66.64	34.00	94.60	47.30
25....	89.07	48.41	91.16	48.48	27.00	14.67	27.00	14.36	63.29	34.40	87.98	46.80
26....	98.83	49.41	100.43	55.79	30.00	15.00	30.00	16.66	65.80	32.90	81.00	45.00
27....	102.21	48.90	103.97	51.21	36.05	17.21	36.05	17.75	73.15	35.00	96.83	47.70
28....	101.80	49.90	101.93	56.00	30.00	14.70	30.00	16.48	66.91	32.80	81.90	45.00
29....	112.97	55.10	113.86	63.25	32.00	15.59	32.00	17.77	66.42	32.40	81.00	45.00
30....	100.83	48.99	102.02	54.26	29.65	14.39	29.65	15.77	69.01	33.50	87.42	46.50
31....	101.10	52.38	102.20	57.09	33.20	17.20	33.20	18.55	66.97	34.70	83.34	46.00
32....	95.38	49.16	98.16	47.65	37.00	19.07	37.00	17.96	65.38	33.70	97.44	47.60
33....	103.36	43.19	104.16	49.60	33.83	14.28	33.83	16.11	79.63	33.60	99.54	47.40
34....	103.94	56.43	105.59	60.33	35.30	19.18	35.30	20.17	62.19	33.80	83.12	47.50
35....	104.32	53.25	106.99	53.76	36.35	18.45	36.35	18.26	67.77	34.40	90.34	46.40
36....	105.41	60.58	106.37	65.25	23.70	13.62	23.70	14.54	63.11	35.70	74.65	46.80
37....	99.08	47.84	100.74	52.45	38.60	18.83	38.60	20.10	70.11	34.20	91.39	47.60
38....	105.28	49.20	106.41	62.42	32.13	15.01	32.13	15.82	73.62	34.40	91.35	45.00
39....	92.90	48.89	93.83	55.86	30.00	15.79	30.00	17.85	63.65	33.50	77.28	46.00
40....	96.93	51.01	97.79	55.88	30.75	16.18	30.75	17.57	66.12	34.80	80.50	46.00
Total.	3993.75	1997.38	4045.62	2178.12	1238.83	617.84	1238.83	663.44	2717.29	1353.11	3477.20	1848.9
Av..	9.984	49.94	10.114	54.45	3.097	15.45	3.097	16.59	6.793	33.80	8.693	46.22

COST OF PRODUCTION.

RYE—TABLE XXXV, continued.

Cost of production and value of products of 400 acres of rye in 10 acre lots.

OFFICE NUMBER.	TOTAL VALUE OF PRODUCTS RAISED.				PROFIT.				LOSS.			
	Total value per acre and bushel.				Profit per acre and bushel.				Loss per acre and bushel.			
	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years
	\$	\$	\$	\$	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.
1.....	108.19	5.128	124.05	6.394	8.70	4.12	23.83	12.28	.....	.....	.....	.....
2.....	93.20	4.660	109.08	5.993	1.11	.56	15.86	8.71	.....	.....	.....	.....
3.....	84.60	4.648	104.82	6.277	.....	.....	8.50	5.16	10.46	5.75	.....	.....
4.....	93.73	4.734	101.42	6.066	.....	.....	.....	.....	9.25	4.67	1.51	.24
5.....	88.48	4.999	105.18	6.223	.....	.....	.....	.....	16.23	9.16	1.03	.61
6.....	101.31	4.894	130.65	6.221	2.27	1.10	29.06	13.84	.....	.....	.....	.....
7.....	104.10	4.829	126.30	6.112	6.91	3.19	26.30	12.83	.....	.....	.....	.....
8.....	101.18	4.959	118.75	6.454	.....	.....	15.51	8.48	.93	.46	.....	.....
9.....	94.61	4.707	107.16	6.304	.....	.....	2.73	1.61	9.80	4.82	.....	.....
10.....	113.36	4.994	128.49	6.268	10.88	4.66	24.61	12.01	.....	.....	.....	.....
11.....	93.13	4.776	125.40	6.127	.....	.....	28.07	4.67	3.28	1.67	.....	.....
12.....	94.94	4.795	111.00	6.166	.98	.50	15.92	8.81	.....	.....	.....	.....
13.....	94.07	4.977	126.88	6.312	.....	.....	21.67	10.78	7.97	4.21	.....	.....
14.....	92.44	4.814	121.72	6.309	.....	.....	26.53	13.81	.15	.08	.....	.....
15.....	95.27	4.787	112.17	6.163	.....	.....	13.84	7.60	1.76	.87	.....	.....
16.....	112.96	4.827	131.63	6.328	21.63	9.25	39.65	19.06	.....	.....	.....	.....
17.....	91.45	4.943	102.25	6.198	.....	.....	.....	.....	12.80	6.92	2.59	1.57
18.....	100.20	5.010	115.00	6.388	.....	.....	11.31	6.27	2.54	1.27	.....	.....
19.....	99.51	4.761	117.50	6.184	.03	.02	16.97	8.93	.....	.....	.....	.....
20.....	98.33	4.892	113.00	6.277	.....	.....	13.24	7.35	.80	.39	.....	.....
21.....	110.35	4.993	138.84	6.427	13.21	5.98	39.54	18.30	.....	.....	.....	.....
22.....	96.20	4.810	111.00	6.166	.....	.....	7.53	4.18	6.12	3.06	.....	.....
23.....	97.00	4.850	108.00	6.000	.66	.34	10.80	6.00	.....	.....	.....	.....
24.....	98.14	5.007	126.10	6.305	.....	.....	19.04	9.52	6.31	3.19	.....	.....
25.....	90.29	4.907	114.98	6.116	1.22	.66	23.82	12.68	.....	.....	.....	.....
26.....	95.80	4.790	111.00	6.166	.....	.....	10.57	5.87	3.03	1.51	.....	.....
27.....	109.20	5.224	132.88	6.545	6.99	3.34	28.91	14.24	.....	.....	.....	.....
28.....	96.91	4.750	111.90	6.148	.....	.....	9.97	5.48	4.89	2.40	.....	.....
29.....	98.42	4.799	113.00	6.277	.....	.....	.....	.....	14.55	7.11	.86	.48
30.....	98.66	4.789	117.07	6.227	.....	.....	15.05	8.01	2.17	1.10	.....	.....
31.....	100.17	5.190	116.54	6.455	.....	.....	14.34	7.46	.93	.48	.....	.....
32.....	102.38	5.277	134.44	6.526	7.00	3.61	36.28	17.61	.....	.....	.....	.....
33.....	113.46	4.788	133.37	6.351	10.10	4.69	29.21	13.91	.....	.....	.....	.....
34.....	97.49	5.298	118.42	6.767	.....	.....	12.83	7.34	6.45	3.45	.....	.....
35.....	104.12	5.285	126.69	6.366	.....	.....	19.70	9.90	.80	.40	.....	.....
36.....	86.81	4.932	98.35	6.034	.....	.....	.....	.....	18.60	11.26	8.02	4.91
37.....	108.71	5.303	129.99	6.770	9.63	5.19	29.25	15.25	.....	.....	.....	.....
38.....	106.75	4.941	123.48	6.082	.47	.21	17.07	8.40	.....	.....	.....	.....
39.....	93.65	4.929	107.28	6.885	.75	.40	13.45	7.99	.....	.....	.....	.....
40.....	96.87	5.098	111.25	6.357	.....	.....	13.46	7.69	.06	.03	.....	.....
Total..	3956.12	197.094	4716.03	251.234	102.24	47.82	686.42	342.03	139.87	74.26	14.01	7.81
Average	9.890	.493	11.790	.628	2.556	1.195	1.716	8.551	.349	1.856	.0035	.0020

TABLE XXXVI.—SUMMARY OF TABLE XXXV.

In the tables on this page have been summarized the results in the foregoing table. The tables show the total cost of producing 400 acres of rye and the average cost per acre and bushel. The total value of products of 400 acres and the average value per acre and bushel. In the analysis of expenses wages was allowed for team work as well as for labor.

(For a more complete analysis of expenses in this case, both when wages is allowed for team work and when horses or their value is treated as capital, see the next two pages.)

Cost of production.

Items.	400 acres, 1896.	One acre.	Bush.	400 acres, 5 years.	One acre.	One Bush.
	\$	\$	Cts.	\$	\$	Cts.
Plowing	430.89	1.077	5.40	430.89	1.077	5.81
Harrowing and seeding	235.46	.588	2.95	235.46	.588	3.18
Cutting	103.98	.260	1.30	103.98	.260	1.40
Fertilizing	614.25	1.536	7.68	614.25	1.536	8.27
Seed	225.19	.563	2.80	306.62	.767	4.12
Shocking and stacking	238.15	.595	2.97	238.15	.595	3.21
Threshing	204.12	.510	2.54	190.06	.475	2.54
Marketing	213.50	.533	2.66	197.55	.494	2.66
Interest	1242.82	3.107	15.56	1242.82	3.107	16.72
Wear and tear	185.84	.465	2.33	185.84	.465	2.50
Taxes	100.00	.250	1.25	100.00	.250	1.35
Other expenses	200.00	.500	2.50	200.00	.500	2.69
Total	3993.76	9.584	49.94	4045.62	10.114	54.45

Value of products.

Value of grain	2717.29	6.793	33.82	3477.20	8.693	46.22
Value of straw	1238.83	3.097	15.45	1238.83	3.097	16.59
Total value	3956.12	9.890	49.27	4716.03	11.790	62.81

Profit and loss.

Profit	102.24	2.556	11.95	686.42	1.716	8.55
Loss	139.87	3.497	18.56	14.01	.035	.19
Balance profit and loss....	37.63	.941	6.61	672.41	1.681	8.35

TABLE XXXVII.—COST OF PRODUCTION AND VALUE OF 400 ACRES OF RYE.

The data upon which the calculations in the tables on this page are based may also be found in tables 24, 25, 26. "Cost of Production" is shown in Section 1. "Value of Products" is shown in Section 2. Section 3 shows the "Surplus Value or Cost," as the case may be. In Section 4 is presented the "Annual Investment" and the respective amounts of interest and necessary profit at 12 per cent. on same and upon the value of the machinery used, and also the "Surplus Value" above the sum of these expenses. It should be noticed that in this presentation wages has been allowed for team work in place of treating horses, or their value, as other capital.

1. Cost of production.

Items.	400 acres.	One acre.	Bush.
	\$	\$	Cts.
1 Plowing .....1812 hours at 24 cents	434.88	1.087	5.81
2 Harrowing, etc. ....640 hours at 24 cents	153.60	.384	2.05
3 Seeding .....34 hours at 24 cents	82.56	.206	1.10
4 Cutting .....384 hours at 24 cents	92.16	.230	1.23
5 Shocking .....464 hours at 11.8 cents	54.75	.137	.73
6 Stacking, man and team .....492 hours at 24 cents	118.08	.295	1.58
7 Stacking, extra man .....492 hours at 11.8 cents	58.06	.145	.77
8 Threshing, labor .....1049 hours at 11.8 cents	123.78	.310	1.65
9 Threshing, machine.....7491 bush. at 1 cent	74.91	.188	1.00
10 Marketing .....832 hours at 24 cents	199.68	.499	2.66
11 Seed .....658 bush. at 50 cents	329.00	.823	4.39
12 Taxes .....400 acres at 26 cents	104.00	.260	1.39
13 Fertilizing .....1000 loads manure....	300.00	.750	4.00
14 Other expenses .....400 acres at 50 cents	200.00	.500	2.67
15 Depreciation .....1860.00 dollars at 10 per cent.	186.00	.465	2.49
Annual investment	2511.46	6.279	33.52
16 Interest, machinery .....1860.00 dollars at 6 per cent.	111.60	.279	1.49
17 Interest, an. investment..2511.45 dollars at 6 per cent.	150.69	.376	2.01
18 Interest, land .....16886.00 dollars at 6 per cent.	1012.80	2.532	13.52
Total	3786.55	9.466	50.54

Total investment, \$21,257.46. Average investment per acre, \$53.14. Team work, 450.2 days. Labor, 650.7 days. Value per acre of land, \$42.20.

2. Value of products.

1 7491 bushels rye at 46.2 cents, av. 6 yrs.....	3460.84	8.652	46.20
2 400 acres straw at \$2.00.....	800.00	2.000	10.68
Total	4260.84	10.652	56.88

3. Surplus Value.

Value above costs (profits).....	474.29	11.86	14.68
----------------------------------	--------	-------	-------

Equivalent to 2.23 per cent. on capital invested.

Part IV.—Annual investment, interest and necessary profit at 12 per cent. on same and upon the value of machinery and horses used; also the surplus value of the products above the sum of these expenses. This surplus if credited to land and capitalized at 12 per cent. gives the value of the land for raising rye.

Annual investment	2511.46	62.79	33.52
Machinery .....\$1,860.00 at 12 per cent.	223.20	5.58	2.98
Annual investment .....2,511.46 at 12 per cent.	301.37	7.53	4.03
Total expenses less rent.....	3036.03	75.90	40.53
Surplus credited to land.....	*1224.81	30.62	16.35
Total	4260.84	106.52	56.88

* Capitalized at 12 per cent. equivalent to \$10,206.75 or \$25.51 per acre. This is \$16.69 per acre below the value reported by the farmers.

TABLE XXXVIII.—COST OF PRODUCTION AND VALUE OF 400 ACRES OF RYE.

The data upon which the calculations in the table on this page are based may also be found in tables 24, 25, 26. "Cost of Production" is shown in Section 1, "Value of Product" is shown in Section 2. Section 3 shows the "Surplus Value" above cost. In Section 4 is shown the "Annual Investment" and the respective amounts of interest and the necessary profit at 12 per cent. on same and upon the value of machinery and horses used, also the surplus value of these expenses. In this presentation horses, or their value, have been treated as other capital.

1. Cost of production.

Items.	400 acres.	One acre.	Per bushel.
	\$	\$	Cts.
1 Plowing 1812 hours at 11.8 cents	213.81	.534	2.85
2 Harrowing, etc. 640 hours at 11.8 cents	75.52	.189	1.01
3 Seeding 344 hours at 11.8 cents	40.59	.101	.54
4 Cutting 384 hours at 11.8 cents	45.33	.113	.61
5 Shocking 464 hours at 11.8 cents	54.75	.137	.73
6 Stacking 984 hours at 11.8 cents	116.12	.290	1.55
7 Threshing 1049 hours at 11.8 cents	123.78	.309	1.65
8 Threshing 7491 bush. at 1 cent	74.91	.188	1.00
9 Marketing 832 hours at 11.8 cents	98.18	.246	1.31
10 Seed 658 bush. at 50 cents	329.00	.822	4.39
11 Taxes 400 acres at 26 cents	104.00	.260	1.39
12 Maintenance of horses 400 acres at 92 cents	368.00	.920	4.91
13 Fertilizing 1000 loads manure.....	300.00	.750	4.00
14 Other expenses 400 acres at 50 cents	200.00	.500	2.67
15 Depreciation, machinery .1,860.00 dollars at 10 per cent.	186.00	.465	2.49
16 Depreciation, horses 584.00 dollars at 10 per cent.	58.40	.146	.78
Annual investment	2388.39	5.970	31.88
17 Interest on machinery.... 1,860.00 dollars at 6 per cent.	111.60	.279	1.49
18 Interest, horses 584.00 dollars at 6 per cent.	35.00	.088	.47
19 Interest, an. investment.. 2,388.39 dollars at 6 per cent.	143.30	.358	1.91
20 Interest, land 16,880.00 dollars at 6 per cent.	1012.80	2.532	13.52
Total	3691.09	9.227	49.28

Total investment, \$21,712.39. Average investment per acre \$54.23. Team work, 450.2 days. Labor, 650.7 days. Value per acre of land, \$42.20.

2. Value of products.

1 7491 bushels rye at 46.2 cents, av. 6 years.....	3460.84	8.652	46.20
2 400 acres straw at \$2.00.....	800.00	2.000	10.68
Total value	4260.84	10.652	56.88

3. Surplus Value.

Value above costs (profit).....	569.75	14.25	7.60
---------------------------------	--------	-------	------

Equivalent to 2.62 per cent. on capital invested.

Part IV.—Annual investment, interest and necessary profit at 12 per cent. on same and upon the value of machinery and horses used; also the surplus value of the products above the sum of these expenses. This surplus if credited to land and capitalized at 12 per cent. gives the value of the land for raising rye.

Annual investment	2388.39	5.970	31.88
Machinery \$1,860.00 at 12 per cent.	223.20	.558	2.98
Horses 584.00 at 12 per cent.	70.00	.175	.93
Annual investment 2,388.39 at 12 per cent.	286.61	.717	3.83
Total expenses less rent.....	2968.20	7.420	39.62
Surplus-credited to land.....	*1292.64	3.232	17.26
Total	4260.84	10.652	56.88

*Capitalized at 12 per cent. equivalent to \$10,636.00 or \$26.71 per acre. This is \$15.49 per acre below the value reported by the farmers.

In relation to the cost of producing 400 acres of rye as presented in the four preceding tables it is, perhaps, proper to repeat here a few facts to which attention has already been called.

In table 35, covering six pages, the cost per ten acres, the total cost of 400 acres and the average cost per acre are presented. Table 36 is made up of the totals of table 35. Table 37 is a more complete analysis of table 35, including besides the expenses in that table, interest on the value of the machinery used and upon the sum of the annual investments. These items of expenses were added because they are unavoidable in farming and constitute a proper charge against the products.

It should be noticed that in these three tables the expenses in farming arising from the use of horses for motor power was arrived at by allowing wages, at ruling rates in the respective localities, for team work. It appeared, however, that this is not the proper way in which to treat expenses of this nature. Work horses are usually regarded as capital invested. This being the case, expenses from this source are with a few exceptions similar to the expenses of other capital used and should, therefore, be treated accordingly. Another analysis of the cost of production was therefore made, in which the expenses arising from the horses used were treated from this point of view. This analysis is presented in table 38 and includes in the expenses, wages for man's labor only, while for horses, depreciation and interest on their value and actual yearly cost, per acre, of their maintenance was allowed as expense. This method of treating expenses of this kind does not greatly affect the total cost, but is undoubtedly proper, at least in most cases.

The average cost per acre and bushel of growing rye as computed from table XXXV., is shown below:

Items.	One acre.	One Bush.
	\$	Cts.
Plowing .....	.534	2.35
Harrowing, etc. ....	.189	1.01
Seeding .....	.101	.54
Cutting .....	.113	.61
Shocking .....	.137	.73
Stacking .....	.290	1.55
Threshing, labor .....	.309	1.65
Threshing, machine .....	.188	1.00
Marketing .....	.246	1.31
Seed .....	.822	4.39
Taxes .....	.260	1.39
Maintenance, horses .....	.920	4.91
Fertilizing .....	.750	4.00
Other expenses .....	.500	2.67
Depreciation, machinery .....	.465	2.49
Depreciation, horses .....	.146	.78
Annual investment	5.970	31.83
Interest, machinery .....	.279	1.49
Interest, horses .....	.083	.47
Interest, annual investment .....	.353	1.91
Interest, land	2.532	13.52
Total	9.227	49.28

BARLEY—TABLE XXXIX.

Cost of production and value of products of 400 acres of barley in 10 acre lots.

OFFICE NO.	PLOWING.				HARROWING.				CUTTING.			
	<i>Cost per acre and bushel.</i>				<i>Cost per acre and bushel.</i>				<i>Cost per acre and bushel.</i>			
	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years
\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	
1.....	8.72	2.61	8.72	2.79	5.66	1.66	5.56	1.77	2.35	.70	2.35	.75
2.....	10.74	3.60	10.74	3.70	5.68	1.90	5.68	1.96	2.42	.81	2.42	.83
3.....	10.41	3.49	10.41	3.75	6.54	2.19	6.54	2.37	2.47	.84	2.47	.89
4.....	11.84	3.78	11.84	4.23	6.96	2.22	6.96	2.49	2.62	.84	2.62	.93
5.....	11.01	3.49	11.01	3.55	5.80	1.83	5.80	1.89	2.37	.75	2.37	.78
6.....	11.28	3.44	11.28	3.47	5.81	2.37	5.81	1.78	2.80	.85	2.80	.86
7.....	9.51	3.02	9.51	3.16	5.44	1.72	5.44	1.80	2.28	.72	2.28	.73
8.....	10.75	3.36	10.75	3.62	7.06	2.21	7.06	2.38	2.72	.86	2.72	.91
9.....	10.21	2.96	10.21	3.20	5.95	1.72	5.95	1.86	2.66	.77	2.66	.83
10.....	9.67	2.84	9.67	3.05	5.64	1.66	5.64	1.78	2.55	.75	2.55	.80
11.....	10.56	3.50	10.56	3.68	5.32	1.76	5.32	1.86	2.70	.89	2.70	.94
12.....	11.25	3.76	11.25	3.85	5.58	1.86	5.58	1.91	2.53	.84	2.53	.86
13.....	10.20	3.18	10.20	3.23	6.40	2.00	6.40	2.03	2.15	.86	2.15	.88
14.....	10.32	3.13	10.32	3.21	5.40	1.64	5.40	1.69	2.29	.69	2.29	.72
15.....	11.05	3.65	11.05	3.74	5.85	1.92	5.85	1.98	2.77	.91	2.77	.94
16.....	9.67	2.82	9.67	2.87	4.96	1.44	4.96	1.48	2.29	.67	2.29	.68
17.....	13.14	4.22	13.14	4.68	6.20	1.98	6.20	2.22	2.99	.95	2.99	1.07
18.....	10.79	3.47	10.79	3.66	6.72	2.15	6.72	2.36	2.42	.77	2.42	.89
19.....	11.85	3.99	11.85	4.03	6.17	1.90	6.17	2.09	2.80	.86	2.80	.95
20.....	11.36	3.52	11.36	3.72	5.85	1.82	5.85	1.91	2.77	.86	2.77	.90
21.....	11.44	3.01	11.44	3.15	5.04	1.32	5.04	1.39	2.57	.68	2.57	.70
22.....	11.85	3.88	11.85	4.04	6.30	2.05	6.30	2.25	2.65	.86	2.65	.90
23.....	11.90	4.12	11.90	4.16	6.40	2.21	6.40	2.24	2.62	.91	2.62	.92
24.....	10.46	3.23	10.46	3.28	4.99	1.54	4.99	1.57	2.39	.74	2.39	.75
25.....	9.98	3.11	9.98	3.21	5.22	1.62	5.22	1.68	2.59	.81	2.59	.81
26.....	10.71	3.57	10.71	3.68	5.75	1.91	5.75	1.98	2.50	.83	2.50	.85
27.....	10.10	2.89	10.10	3.05	6.41	1.84	6.41	1.96	2.55	.73	2.55	.78
28.....	11.02	3.60	11.02	3.75	6.37	2.08	6.37	2.17	2.72	.88	2.72	.92
29.....	10.12	3.24	10.12	3.45	6.03	1.93	6.03	2.07	2.77	.89	2.77	.95
30.....	11.28	3.14	11.28	3.49	6.34	1.77	6.34	1.96	2.49	.69	2.49	.77
31.....	11.33	3.26	11.33	3.57	6.38	1.82	6.38	2.02	2.50	.72	2.50	.78
32.....	10.32	3.34	10.32	3.23	5.40	1.64	5.40	1.69	2.67	.86	2.67	.83
33.....	10.87	3.19	10.87	3.61	6.50	1.91	6.50	2.16	2.75	.80	2.75	.92
34.....	11.97	3.44	11.97	3.75	5.85	1.69	5.85	1.84	2.66	.76	2.66	.83
35.....	11.42	3.09	11.42	3.43	5.60	1.53	5.60	1.68	2.84	.78	2.84	.86
36.....	11.16	3.54	11.16	3.79	6.20	1.96	6.20	2.11	2.80	.89	2.80	.96
37.....	10.32	3.14	10.32	3.53	5.13	1.56	5.13	1.74	2.50	.75	2.50	.85
38.....	10.81	3.08	10.81	3.27	5.40	1.56	5.40	1.64	2.64	.76	2.64	.80
39.....	10.24	3.17	10.24	3.47	6.86	2.12	6.86	2.33	2.90	.90	2.90	.96
40.....	9.26	2.73	9.26	3.12	5.49	1.62	5.49	1.60	2.34	.69	2.34	.79
Total....	430.89	133.59	430.89	141.26	236.36	73.67	236.36	77.79	105.00	32.11	105.00	34.10
Average.	1.077	3.339	1.077	3.531	.5909	1.842	.5909	1.949	.2625	.803	.2625	.852

BARLEY—TABLE XXXIX, continued.

Cost of production and value of products of 400 acres of barley in 10 acre lots.

OFFICE No.	FERTILIZING.				SEED.				SHOCKING.			
	Cost per acre and bushel.				Cost per acre and bushel.				Cost per acre and bushel.			
	Acre 1896 \$	Bush 1896 Cts.	Acre 5 years \$	Bush 5 years Cts.	Acre 1896 \$	Bush 1896 Cts.	Acre 5 years \$	Bush 5 years Cts.	Acre 1896 \$	Bush 1896 Cts.	Acre 5 years \$	Bush 5 years Cts.
1.....	23.10	6.91	23.10	7.36	6.19	1.85	8.71	2.78	5.58	1.67	5.58	1.78
2.....	25.00	8.39	25.00	8.62	6.27	2.10	9.92	3.42	5.36	1.79	5.36	1.85
3.....	25.00	8.39	25.00	9.03	5.66	1.90	8.72	3.15	4.66	1.56	4.66	1.66
4.....	25.00	7.96	25.00	8.93	6.12	1.94	9.10	3.25	6.13	1.96	6.13	2.18
5.....	25.00	7.94	25.00	8.14	7.15	2.27	9.35	3.04	5.57	1.77	5.57	1.82
6.....	25.00	7.63	25.00	7.67	6.00	1.84	9.76	2.99	6.56	2.00	6.56	2.02
7.....	25.40	8.07	25.40	8.43	5.78	1.83	8.19	2.72	4.71	1.50	4.71	1.59
8.....	26.10	8.16	26.10	8.79	5.88	1.84	8.94	3.01	5.86	1.83	5.86	1.98
9.....	27.80	8.06	27.80	8.69	6.09	1.77	9.43	2.95	6.51	1.89	6.51	2.03
10.....	26.80	7.86	26.80	8.46	5.80	1.70	9.00	2.84	5.45	1.59	5.45	1.74
11.....	25.00	8.28	25.00	8.72	5.77	1.91	9.24	3.22	6.09	2.01	6.09	2.12
12.....	25.00	8.36	25.00	8.56	6.20	2.07	9.70	3.32	5.50	1.84	5.50	1.88
13.....	25.00	7.79	25.00	7.91	5.50	1.72	9.21	2.91	6.25	1.96	6.25	1.98
14.....	25.00	7.57	25.00	7.79	4.90	1.48	9.88	2.82	5.35	1.63	5.35	1.66
15.....	25.00	8.25	25.00	8.49	6.44	2.12	10.23	3.47	6.48	2.13	6.48	2.19
16.....	25.00	7.26	25.00	7.42	5.96	1.74	9.14	2.71	4.28	1.25	4.28	1.27
17.....	25.00	8.02	25.00	8.89	5.88	1.88	9.28	3.30	7.08	2.27	7.08	2.53
18.....	25.00	8.04	25.00	8.51	6.13	1.97	9.68	3.29	6.10	1.96	6.10	2.07
19.....	25.00	7.76	25.00	8.50	5.52	1.71	8.80	2.99	7.40	2.29	7.40	2.52
20.....	25.00	7.74	25.00	8.18	5.84	1.81	13.64	4.46	6.06	1.88	6.06	1.98
21.....	25.00	6.58	25.00	6.89	6.20	1.63	9.30	2.57	5.38	1.41	5.38	1.49
22.....	25.00	8.19	25.00	8.53	6.62	2.17	10.07	3.43	6.63	2.17	6.63	2.26
23.....	25.00	8.65	25.00	8.74	6.44	2.23	10.12	3.54	6.79	2.35	6.79	2.37
24.....	25.40	7.84	25.40	7.96	5.56	1.71	9.08	2.81	5.78	1.79	5.78	1.82
25.....	25.00	7.80	25.00	8.04	6.17	1.93	9.81	3.16	6.31	1.97	6.31	2.04
26.....	25.00	8.34	25.00	8.59	6.16	2.05	9.68	3.32	5.27	1.75	5.27	1.81
27.....	25.70	7.35	25.70	7.84	6.29	1.79	9.90	3.02	5.76	1.65	5.76	1.76
28.....	25.00	8.17	25.00	8.50	5.84	1.91	9.24	3.14	6.62	2.16	6.62	2.25
29.....	25.00	8.02	25.00	8.54	6.53	2.09	10.18	3.48	6.74	2.17	6.74	2.30
30.....	24.50	6.79	24.50	7.59	6.20	1.73	9.53	2.95	5.38	1.49	5.38	1.67
31.....	24.90	7.16	24.90	7.84	5.88	1.69	8.80	2.76	6.08	1.74	6.08	1.91
32.....	25.65	8.31	25.65	8.01	6.31	2.05	10.07	3.14	5.66	1.83	5.66	1.77
33.....	26.70	7.86	26.70	8.87	6.30	1.86	9.46	3.13	5.84	1.72	5.84	1.94
34.....	27.40	7.87	27.40	8.58	5.74	1.65	8.98	2.81	5.40	1.56	5.40	1.68
35.....	25.30	6.86	25.30	7.59	5.60	1.52	8.86	2.66	7.12	1.92	7.12	2.13
36.....	27.80	8.83	27.80	9.45	6.60	2.09	9.81	3.34	6.10	1.94	6.10	2.07
37.....	25.75	7.84	25.75	8.78	6.30	1.92	9.55	3.27	5.91	1.80	5.91	1.92
38.....	24.40	6.98	24.40	7.42	6.09	1.75	9.51	2.89	6.45	1.85	6.45	1.97
39.....	25.00	7.74	25.00	8.48	6.17	1.92	9.24	3.13	6.20	1.92	6.20	2.10
40.....	25.60	7.56	25.60	8.62	5.74	1.69	8.68	2.93	5.85	1.73	5.85	1.97
Total..	1013.30	313.18	1013.30	331.55	241.82	74.83	378.92	124.12	238.15	73.69	238.15	78.16
Average	2.533	7.829	2.533	8.298	6.045	1.871	9.47	3.103	5.954	1.842	5.954	1.954

BARLEY—TABLE XXXIX, continued.

Cost of production and value of products of 400 acres of barley in 10 acre lots.

OFFICE NO.	THRESHING.				MARKETING.				INTEREST.			
	Cost per acre and bushel.				Cost per acre and bushel.				Cost per acre and bushel.			
	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years
\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	
1.....	7.34	2.20	6.90	2.20	7.51	2.26	7.06	2.25	30.60	9.16	30.60	9.74
2.....	7.15	2.40	6.96	2.40	6.75	2.30	6.67	2.30	26.10	8.76	26.10	9.00
3.....	6.85	2.29	6.37	2.29	7.45	2.50	6.92	2.50	26.70	8.96	26.70	9.64
4.....	7.22	2.30	6.44	2.30	8.16	2.60	7.28	2.60	31.30	9.96	31.30	11.18
5.....	5.98	1.90	5.83	1.90	6.93	2.20	6.75	2.20	37.20	11.82	37.20	12.11
6.....	5.90	1.79	5.86	1.79	5.24	1.59	5.21	1.59	31.08	9.47	31.08	9.64
7.....	6.30	2.00	6.02	2.00	6.93	2.20	6.62	2.20	30.60	9.71	30.60	10.19
8.....	6.72	2.10	6.24	2.10	7.36	2.30	6.83	2.30	33.00	10.31	33.00	11.11
9.....	6.38	1.85	5.92	1.85	8.80	2.55	8.16	2.55	33.60	9.74	33.60	10.50
10.....	7.50	2.20	6.97	2.20	7.16	2.10	6.65	2.10	33.30	9.77	33.30	10.51
11.....	6.94	2.30	6.60	2.30	7.25	2.40	6.89	2.36	29.40	9.73	29.40	10.24
12.....	6.57	2.20	6.42	2.20	6.28	2.10	6.13	2.10	27.30	9.13	27.30	9.35
13.....	6.42	2.00	6.32	2.00	6.74	2.09	6.63	2.09	33.90	10.56	33.90	10.72
14.....	7.92	2.40	7.70	2.40	6.27	1.90	6.09	1.90	28.08	8.49	28.08	8.75
15.....	7.27	2.39	7.08	2.40	5.75	1.89	5.60	1.90	30.66	10.12	30.66	10.39
16.....	7.54	2.20	7.41	2.20	6.86	2.00	6.74	2.00	25.80	7.52	25.80	7.66
17.....	7.80	2.50	7.02	2.50	8.42	2.70	7.58	2.70	30.90	9.91	30.90	10.99
18.....	6.84	2.19	6.46	2.19	9.64	3.09	9.11	3.09	33.00	10.61	33.00	11.23
19.....	7.73	2.40	7.05	2.40	8.69	2.69	7.93	2.69	27.60	8.57	27.60	9.38
20.....	6.78	2.09	6.42	2.09	8.40	2.60	7.95	2.60	33.00	10.21	33.00	10.79
21.....	7.60	2.00	7.26	2.00	5.70	1.50	5.44	1.50	31.02	8.17	31.02	8.54
22.....	6.71	2.20	6.44	2.20	6.40	2.09	6.15	2.09	32.70	10.70	32.70	11.16
23.....	6.65	2.30	6.58	2.30	7.22	2.50	7.15	2.50	24.48	8.47	24.48	8.55
24.....	7.45	2.30	7.34	2.30	7.45	2.30	7.34	2.30	36.90	11.39	36.90	11.60
25.....	6.42	2.00	6.22	2.00	7.06	2.20	6.84	2.20	22.98	7.16	22.98	7.39
26.....	6.30	2.10	6.11	2.10	7.20	2.40	6.98	2.40	31.50	10.50	31.50	10.82
27.....	7.70	2.20	7.21	2.20	5.60	1.60	5.24	1.60	35.28	10.09	35.28	10.76
28.....	7.04	2.30	6.76	2.30	8.26	2.70	7.93	2.70	31.50	10.29	31.50	10.71
29.....	7.17	2.30	6.74	2.30	9.36	3.00	8.79	3.00	30.90	9.90	30.90	10.55
30.....	7.22	2.00	6.46	2.00	9.02	2.50	8.07	2.50	32.10	8.89	32.10	9.94
31.....	6.61	1.90	6.04	1.90	7.65	2.20	6.99	2.20	30.30	8.71	30.30	9.53
32.....	6.80	2.20	7.04	2.20	6.50	2.10	6.72	2.10	29.34	9.49	29.34	9.17
33.....	6.80	2.00	6.02	2.00	8.22	2.40	7.22	2.40	31.50	9.27	31.50	10.46
34.....	7.31	2.10	6.59	2.10	7.65	2.20	7.01	2.20	3.40	10.17	35.40	11.09
35.....	8.12	2.20	7.32	2.20	6.64	1.80	5.99	1.80	33.90	9.18	33.90	10.13
36.....	6.62	2.10	6.17	2.10	8.19	2.60	7.66	2.60	36.60	11.62	36.60	12.45
37.....	6.58	2.00	5.86	2.00	6.58	2.00	5.86	2.00	31.50	9.57	31.50	10.75
38.....	8.38	2.40	7.89	2.40	9.07	2.60	8.56	2.60	34.80	9.97	34.80	10.58
39.....	6.46	2.00	5.90	2.00	7.43	2.30	6.78	2.30	26.10	8.09	26.10	8.85
40.....	6.78	2.00	5.94	2.00	7.46	2.20	6.53	2.20	30.90	9.12	30.90	10.41
Total..	279.87	86.30	263.88	86.31	295.19	91.24	278.05	91.21	1241.82	383.26	1241.82	406.51
Average	.6997	2.157	.6597	2.158	.7379	2.281	.6951	2.780	3.105	9.581	3.105	10.16

BARLEY—TABLE XXXIX, continued.

Cost of production and value of products of 400 acres of barley in 10 acre lots.

OFFICE NO.	WEAR AND TEAR.				TAXES.				OTHER EXPENSES.			
	Cost per acre and bushel.				Cost per acre and bushel.				Cost per acre and bushel.			
	Acre 1896 \$	Bush 1896 Cts.	Acre 5 years \$	Bush 5 years Cts.	Acre 1896 \$	Bush 1896 Cts.	Acre 5 years \$	Bush 5 years Cts.	Acre 1896 \$	Bush 1896 Cts.	Acre 5 years \$	Bush 5 years Cts.
1.....	6.81	2.04	6.81	2.16	2.50	.75	2.50	.79	5.00	1.50	5.00	1.58
2.....	3.67	1.23	3.67	1.26	2.50	.83	2.50	.86	5.00	1.67	5.00	1.73
3.....	6.85	2.29	6.85	2.47	2.50	.83	2.50	.90	5.00	1.67	5.00	1.81
4.....	4.90	1.56	4.90	1.76	2.50	.79	2.50	.89	5.00	1.69	5.00	1.79
5.....	5.20	1.65	5.20	1.69	2.50	.79	2.50	.81	5.00	1.59	5.00	1.62
6.....	5.00	1.52	6.00	1.53	2.50	.76	2.50	.76	5.00	1.53	5.00	1.53
7.....	6.83	2.17	6.83	2.26	2.50	.80	2.50	.83	5.00	1.59	5.00	1.66
8.....	4.00	1.25	4.00	1.34	2.50	.78	2.50	.84	5.00	1.56	5.00	1.68
9.....	4.65	1.35	4.65	1.45	2.50	.72	2.50	.77	5.00	1.44	5.00	1.54
10.....	4.65	1.36	4.65	1.47	2.50	.73	2.50	.78	5.00	1.46	5.00	1.57
11.....	4.40	1.45	4.40	1.53	2.50	.83	2.50	.88	5.00	1.66	5.00	1.75
12.....	4.00	1.34	4.00	1.37	2.50	.84	2.50	.86	5.00	1.67	5.00	1.72
13.....	4.50	1.40	4.50	1.42	2.50	.77	2.50	.79	5.00	1.65	5.00	1.59
14.....	4.00	1.21	4.00	1.24	2.50	.76	2.50	.77	5.00	1.53	5.00	1.55
15.....	2.70	.89	2.70	.91	2.50	.82	2.50	.85	5.00	1.64	5.00	1.70
16.....	4.48	1.31	4.48	1.33	2.50	.73	2.50	.74	5.00	1.46	5.00	1.48
17.....	5.60	1.79	5.60	1.99	2.50	.80	2.50	.88	5.00	1.60	5.00	1.76
18.....	3.96	1.28	3.96	1.34	2.50	.80	2.50	.85	5.00	1.64	5.00	1.71
19.....	4.50	1.39	4.50	1.53	2.50	.77	2.50	.85	5.00	1.55	5.00	1.70
20.....	3.50	1.08	3.50	1.14	2.50	.77	2.50	.81	5.00	1.55	5.00	1.63
21.....	3.30	.87	3.30	.91	2.50	.65	2.50	.68	5.00	1.31	5.00	1.37
22.....	4.50	1.47	4.50	1.54	2.50	.82	2.50	.85	5.00	1.65	5.00	1.70
23.....	4.60	1.60	4.60	1.61	2.50	.87	2.50	.87	5.00	1.74	5.00	1.74
24.....	4.73	1.46	4.73	1.48	2.50	.77	2.50	.78	5.00	1.64	5.00	1.56
25.....	3.85	1.19	3.85	1.24	2.50	.77	2.50	.80	5.00	1.55	5.00	1.61
26.....	4.00	1.34	4.00	1.37	2.50	.83	2.50	.86	5.00	1.67	5.00	1.73
27.....	5.37	1.53	5.37	1.63	2.50	.71	2.50	.76	5.00	1.43	5.00	1.53
28.....	4.00	1.30	4.00	1.36	2.50	.81	2.50	.85	5.00	1.63	5.00	1.71
29.....	5.75	1.84	5.75	1.97	2.50	.80	2.50	.84	5.00	1.60	5.00	1.68
30.....	3.60	1.00	3.60	1.12	2.50	.69	2.50	.77	5.00	1.38	5.00	1.54
31.....	6.63	1.91	6.63	2.08	2.50	.72	2.50	.78	5.00	1.44	5.00	1.56
32.....	4.00	1.29	4.00	1.25	2.50	.81	2.50	.78	5.00	1.62	5.00	1.57
33.....	4.10	1.23	4.10	1.38	2.50	.73	2.50	.83	5.00	1.47	5.00	1.67
34.....	5.72	1.64	5.72	1.79	2.50	.71	2.50	.78	5.00	1.43	5.00	1.57
35.....	5.50	1.49	5.50	1.65	2.50	.67	2.50	.75	5.00	1.35	5.00	1.50
36.....	5.13	1.63	5.13	1.74	2.50	.79	2.50	.85	5.00	1.59	5.00	1.71
37.....	4.87	1.48	4.87	1.66	2.50	.75	2.50	.85	5.00	1.61	5.00	1.71
38.....	3.74	1.07	3.74	1.14	2.50	.72	2.50	.76	5.00	1.44	5.00	1.52
39.....	3.57	1.10	3.57	1.21	2.50	.77	2.50	.84	5.00	1.54	5.00	1.68
40.....	4.60	1.36	4.60	1.55	2.50	.73	2.50	.83	5.00	1.46	5.00	1.66
Total....	185.84	57.36	185.84	60.86	100.00	30.79	100.00	32.62	200.00	61.81	200.00	65.42
Average..	.4646	1.434	.4646	1.521	.250	.769	.250	.815	.500	1.545	.500	1.635

BARLEY—TABLE XXXIX, continued.

Cost of production and value of products of 400 acres of barley in 10 acre lots.

OFFICE NUMBER.	TOTAL COST OF RAISING PRODUCT.				VALUE OF STRAW.				VALUE OF GRAIN.			
	Total cost per acre and bushel.				Value per acre and bushel.				Value per acre and bushel.			
	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years
	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.
1.....	111.26	33.80	112.89	35.95	30.05	8.99	30.05	9.57	99.86	29.9	131.88	42.0
2.....	106.64	35.78	110.02	37.93	35.00	11.74	35.00	12.08	83.14	27.9	127.89	44.1
3.....	109.99	36.91	112.04	40.44	34.00	11.41	34.00	12.27	84.33	28.3	120.77	43.6
4.....	117.75	37.50	119.07	42.52	32.00	10.19	32.00	11.43	96.08	30.6	121.80	43.5
5.....	119.71	38.00	121.68	39.59	39.75	12.61	39.75	12.94	92.92	29.5	135.08	44.0
6.....	112.17	34.79	115.86	35.53	38.00	11.58	38.00	11.65	93.80	28.6	144.74	44.4
7.....	111.28	35.33	113.10	37.57	42.75	13.57	42.75	14.20	95.76	30.4	131.23	43.6
8.....	116.95	36.56	119.00	40.06	41.45	12.95	41.45	13.95	94.08	29.4	132.76	44.7
9.....	120.15	34.81	122.39	38.22	40.50	11.74	40.50	12.62	100.55	29.0	143.68	44.9
10.....	116.02	34.02	118.18	37.28	42.25	12.39	42.25	13.32	98.89	29.0	142.60	45.0
11.....	110.93	36.72	113.70	39.60	35.00	11.59	35.00	12.19	83.05	27.5	126.28	44.0
12.....	107.71	36.02	110.96	37.98	39.00	13.04	39.00	13.36	84.12	28.2	128.77	44.1
13.....	115.16	35.87	118.66	37.55	37.00	11.52	37.00	11.71	88.27	27.5	145.67	46.1
14.....	107.03	32.43	110.75	34.50	38.00	11.51	38.00	11.83	97.35	29.5	144.77	45.1
15.....	111.47	36.73	114.92	38.96	37.00	12.21	37.00	12.54	80.84	28.0	131.27	44.5
16.....	104.34	30.40	107.27	31.84	43.00	12.54	43.00	12.76	102.21	29.8	154.01	45.7
17.....	120.51	38.62	122.29	43.51	40.00	12.82	40.00	14.23	89.54	28.7	126.29	45.3
18.....	118.10	37.97	120.74	41.19	35.00	11.25	35.00	11.90	86.46	27.9	129.36	44.0
19.....	114.76	35.88	116.60	39.63	36.00	11.18	36.00	11.24	88.87	27.6	129.36	44.0
20.....	116.06	35.93	123.05	40.21	36.00	11.14	36.00	11.76	89.79	27.8	134.64	44.0
21.....	110.75	29.13	113.25	31.19	42.00	11.05	42.00	11.56	117.80	31.0	168.79	46.5
22.....	116.86	38.25	119.79	40.85	37.00	12.13	37.00	12.13	87.84	28.8	127.43	43.8
23.....	109.60	37.95	113.14	39.54	32.00	11.07	32.00	11.18	83.81	29.0	125.85	44.0
24.....	118.61	36.61	121.91	38.21	46.80	14.44	46.80	14.67	93.31	28.8	144.83	45.4
25.....	103.08	32.11	106.30	34.18	37.00	11.52	37.00	11.89	92.17	28.0	142.12	45.7
26.....	111.89	37.29	115.00	39.51	33.00	11.00	33.00	11.34	84.00	28.0	128.04	44.0
27.....	118.26	33.81	121.02	36.89	53.60	15.31	53.60	16.34	100.10	28.6	147.60	45.0
28.....	115.87	37.83	118.66	40.36	33.00	10.78	33.00	11.22	85.07	27.8	129.36	44.0
29.....	117.87	37.78	120.52	41.13	40.00	12.82	40.00	13.63	89.44	28.7	131.26	44.8
30.....	115.63	32.07	117.25	36.30	39.70	10.99	39.70	12.29	100.37	27.9	138.57	42.9
31.....	115.76	33.26	117.45	36.93	37.60	10.80	37.60	11.82	102.31	29.4	139.92	44.0
32.....	109.96	35.58	114.18	35.68	40.00	12.94	40.00	12.50	88.68	28.7	146.56	45.8
33.....	117.10	34.44	118.63	39.37	43.90	12.91	43.90	14.58	102.00	30.0	135.45	45.0
34.....	122.60	35.22	124.48	39.02	43.75	12.57	43.75	10.58	99.87	28.7	143.23	44.9
35.....	119.54	32.39	121.35	36.43	42.85	11.61	42.85	12.87	103.32	28.0	147.52	44.3
36.....	124.70	39.58	126.93	43.17	34.45	10.93	34.45	11.71	94.50	30.0	131.12	44.6
37.....	112.94	34.32	114.75	39.16	39.80	12.09	39.80	13.58	98.70	30.0	133.01	45.3
38.....	119.28	34.18	121.70	36.99	46.50	13.32	46.50	14.13	101.21	29.0	149.34	45.5
39.....	108.43	33.57	110.29	37.38	34.50	10.68	34.50	11.69	84.96	29.4	129.80	44.0
40.....	111.52	32.89	112.69	37.94	27.30	8.05	27.30	9.19	97.29	28.7	128.90	43.4
Total.	4568.24	1411.83	4672.21	1530.29	1536.50	472.98	1536.50	496.45	3736.66	1154.3	5451.60	1779.5
Av....	11.421	35.29	11.680	38.26	3.811	11.82	3.841	12.41	9.342	28.86	13.629	44.49

BARLEY—TABLE XXXIX, continued.

Cost of production and value of products of 400 acres of barley in 10 acre lots.

OFFICE NO.	TOTAL VALUE OF PRODUCT.				PROFIT.			
	Total value per acre and bushel.				Profit per acre and bushel.			
	Acres 1896 \$	Bush 1896 Cts.	Acres 5 years \$	Bush 5 years Cts.	Acres 1896 \$	Bush 1896 Cts.	Acres 5 years \$	Bush 5 years Cts.
1.....	129.91	38.89	161.93	51.57	18.65	5.59	49.04	15.62
2.....	118.14	39.64	162.89	56.18	11.50	3.86	52.87	18.25
3.....	118.33	39.71	154.77	55.87	8.34	2.80	42.73	15.43
4.....	128.08	40.79	153.80	54.93	10.33	3.29	34.73	12.41
5.....	132.67	42.11	174.83	56.94	12.96	4.11	53.25	17.35
6.....	131.80	40.18	182.74	56.05	19.63	5.39	66.88	20.52
7.....	128.31	43.97	173.98	57.80	27.23	8.64	60.88	20.23
8.....	135.53	42.35	174.21	58.65	18.58	5.79	55.21	18.59
9.....	141.05	40.74	184.18	57.52	20.90	5.93	61.79	19.30
10.....	141.14	41.39	184.90	58.32	25.12	7.37	66.72	21.04
11.....	118.05	39.09	161.28	56.19	7.12	2.37	47.58	16.59
12.....	123.12	41.24	167.77	57.46	15.41	5.22	56.86	19.48
13.....	125.27	39.02	182.67	57.81	10.11	3.15	64.01	20.26
14.....	135.35	41.01	182.77	56.93	28.32	8.08	72.02	22.43
15.....	117.84	40.21	168.27	57.04	6.37	3.48	53.35	18.08
16.....	145.21	42.34	197.01	58.46	40.87	11.94	89.74	26.62
17.....	129.54	41.52	166.29	59.53	9.03	2.90	44.00	16.02
18.....	121.46	39.15	164.36	55.90	3.36	1.18	43.62	14.71
19.....	124.87	38.78	165.36	55.24	10.11	2.90	48.76	15.61
20.....	125.79	38.94	170.64	55.76	9.73	3.01	47.59	15.55
21.....	159.80	42.05	210.79	58.06	49.05	12.92	97.54	26.87
22.....	124.84	40.93	164.43	55.93	7.98	2.68	44.64	15.08
23.....	115.81	40.07	157.85	55.18	6.21	2.12	44.71	15.64
24.....	140.11	43.24	191.63	60.07	21.50	6.63	69.72	21.86
25.....	129.17	40.22	179.12	57.59	26.09	8.11	72.82	23.41
26.....	117.00	39.00	161.04	55.34	5.11	1.71	46.04	15.83
27.....	153.70	43.91	201.20	61.34	35.44	10.10	80.18	24.45
28.....	118.07	38.58	162.36	55.22	2.20	.75	43.70	14.86
29.....	129.44	41.52	171.26	58.43	11.57	3.74	50.74	17.30
30.....	140.07	38.89	178.27	55.19	24.44	6.82	61.02	18.89
31.....	139.91	40.20	177.52	55.82	24.15	6.94	60.07	18.89
32.....	128.68	41.64	186.56	58.30	18.72	6.06	72.38	22.62
33.....	145.90	42.91	179.35	59.58	28.80	8.47	60.82	20.21
34.....	143.62	41.27	186.98	55.48	21.02	6.05	62.50	16.46
35.....	146.17	39.61	190.37	57.17	26.63	7.22	69.02	20.74
36.....	128.95	40.93	165.57	56.31	4.25	1.35	38.64	13.14
37.....	138.50	42.09	173.11	59.08	25.56	7.77	58.36	19.92
38.....	147.71	42.32	195.54	59.43	28.43	8.14	73.84	22.44
39.....	119.46	40.08	164.30	55.69	11.03	6.51	54.01	18.31
40.....	124.59	36.75	156.20	52.59	13.07	3.86	43.51	14.65
Total.....	5273.16	1627.28	6988.10	2275.95	704.92	215.45	2315.89	745.66
Average.....	13.183	40.68	17.470	56.90	1.762	5.386	5.790	18.64

TABLE XL.—SUMMARY OF TABLE XXXIX.

In the tables on this page have been summarized the results in the foregoing table. The tables show the total cost of producing 400 acres of Barley and the average cost per acre and bushel, the total value of products of 400 acres and the average value per acre and bushel. In the analysis of expenses wages was allowed for team work as well as for labor.

(For a more complete analysis of expenses in this case, both when wages is allowed for team work and when horses or their value is treated as capital, see the next two pages.)

Cost of production.

Items.	400 acres, 1896,	One acre.	Bush.	400 acres, 5 years.	One acre.	Bush.
	\$	\$	Cts.	\$	\$	Cts.
Plowing	430.89	1.077	3.34	430.89	1.077	3.53
Harrowing and seeding	236.36	.591	1.84	236.36	.591	1.95
Cutting	105.00	.262	.80	105.00	.262	.85
Fertilizing	1013.30	2.533	7.83	1013.30	2.533	8.30
Seed	241.82	.605	1.87	378.92	.947	3.10
Shocking and stacking	238.15	.595	1.84	238.15	.595	1.95
Threshing	279.87	.700	2.16	263.88	.660	2.16
Marketing	295.19	.738	2.28	278.05	.695	2.28
Interest	1241.82	3.105	9.58	1241.82	3.105	10.16
Wear and tear	185.84	.465	1.44	185.84	.465	1.52
Taxes	100.00	.250	.77	100.00	.250	.82
Other expenses	200.00	.500	1.54	200.00	.500	1.64
Total	4568.24	11.421	35.29	4672.21	11.680	38.26

Value of products.

Value of grain.....	3736.66	9.342	28.86	5451.60	13.63	44.49
Value of straw.....	1536.50	3.841	11.82	1536.50	3.84	12.41
Total value	5273.16	13.183	40.68	6988.10	17.47	56.90

Profit and loss.

Profit	704.92	1.762	5.29	2315.89	5.790	18.6
Loss						
Balance profit	704.92	1.762	5.29	2315.89	5.790	18.6

TABLE XLI.

COST OF PRODUCTION AND VALUE OF 400 ACRES OF BARLEY.

The data upon which the calculations in the tables on this page are based may also be found in tables 42, 25, 26. "Cost of Production" is shown in Section 1. "Value of Products" is shown in Section 2. Section 3 shows the "Surplus Value or Cost," as the case may be. In Section 4 is presented the "Annual Investment" and the respective amounts of interest and necessary profit at 12 per cent. on same and upon the value of the machinery used, and also the "Surplus Value" above the sum of these expenses. It should be noticed that in this presentation wages has been allowed for team work in place of treating horses, or their value, as other capital.

1. Cost of production.

Items.	400 acres.	One acre.	Bush.
	\$	\$	Cts.
1 Plowing 1812 hours at 24 cents	434.88	1.087	3.56
2 Harrowing, etc. 640 hours at 24 cents	153.60	.384	1.25
3 Seeding 344 hours at 24 cents	82.56	.206	.67
4 Cutting 384 hours at 24 cents	92.16	.230	.75
5 Shocking 484 hours at 11.8 cents	54.75	.137	.45
6 Stacking, man and team..... 492 hours at 24 cents	118.08	.295	.96
7 Stacking, extra man 492 hours at 11.8 cents	58.06	.145	.47
8 Threshing, labor 1112 hours at 11.8 cents	131.22	.328	1.08
9 Threshing, machinery 1229 bush. at 1 cent	122.29	.306	1.00
10 Marketing 832 hours at 24 cents	199.68	.499	1.63
11 Seed 840 bush. at 45 cents	378.00	.946	3.09
12 Taxes 400 acres at 26 cents	104.00	.260	.85
13 Fertilizing 1000 loads manure....	400.00	1.000	3.27
14 Other expenses 400 acres at 50 cents	200.00	.500	1.64
15 Depreciation, machinery. 1860.00 dollars at 10 per cent.	186.00	.465	1.52
Annual Investment	2715.28	6.788	22.20
16 Interest on machinery.... 1860.00 dollars at 6 per cent.	111.60	.279	.91
17 Interest, an. investment. 2715.28 dollars at 6 per cent.	162.92	.407	1.33
18 Interest, land 16880.00 dollars at 6 per cent.	1012.80	2.532	8.29
Total	4002.60	10.006	32.73

Total investment, \$21,455.28. Average investment per acre, \$53.64. Team work, 460.4 days. Labor, 657.2 days. Value per acre of land, \$42.20.

2. Value of products.

1 12229 bushels parley at 44.5 cents, av. 6 years.....	5441.90	13.605	44.50
2 400 acres straw at \$1.40.....	560.00	1.400	4.57
Total	6001.90	15.005	49.07

3. Surplus Value.

Value above cost—profit.....	1999.30	4.999	16.24
------------------------------	---------	-------	-------

Equivalent to 9.31 per cent. on the capital invested.

Part IV.—Annual investment, interest and necessary profit at 12 per cent. on same and upon the value of machinery used; also the surplus value of the products above the sum of these expenses. This surplus if credited to land and capitalized at 12 per cent. gives the value of the land for raising barley.

Annual Investment	2715.28	6.788	22.20
Machinery \$1,860.00 at 12 per cent.	223.20	.558	1.82
Annual investment 2,715.28 at 12 per cent.	325.83	.815	2.66
Total expenses less rent.....	3264.31	8.161	26.68
Surplus	*2737.58	6.844	22.39
Total.....	6001.89	15.005	49.07

*Capitalized at 12 per cent. equivalent to \$22,813.17 or \$57.03 per acre. This is \$14.83 per acre above the value reported by the farmers.

TABLE XLII.—COST OF PRODUCTION AND VALUE OF 400 ACRES OF BARLEY.

The data upon which the calculations in the table on this page are based may also be found in tables 24, 25, 26. "Cost of Production" is shown in Section I. "Value of products" is shown in section 2. Section 3 shows the "Surplus Value" above cost. In Section 4 is shown the "Annual Investment" and the respective amounts of interest and the necessary profit at 12 per cent. on same and upon the value of machinery and horses used; also the surplus value of these expenses. In this presentation horses, or their value, have been treated as other capital.

1. *Cost of production.*

Items.		400 acres.	One acre.	Bush.	
1	Plowing	1812 hours at 11.8 cents	\$ 213.81	\$.534	Cts. 1.75
2	Harrowing, etc.	640 hours at 11.8 cents	75.52	.189	.62
3	Seeding	344 hours at 11.8 cents	40.59	.101	.33
4	Cutting	384 hours at 11.8 cents	45.33	.113	.37
5	Shocking	464 hours at 11.8 cents	54.75	.137	.45
6	Stacking	984 hours at 11.8 cents	116.12	.290	.94
7	Threshing	1112 hours at 11.8 cents	131.22	.328	1.08
8	Threshing	12229 bush. at 1 cent	122.29	.306	1.00
9	Marketing	832 hours at 11.8 cents	98.18	.246	.80
10	Seed	840 bush. at 45 cents	378.00	.945	3.09
11	Taxes	400 acres at 26 cents	104.00	.260	.85
12	Maintenance horses	400 acres at 92 cents	368.00	.920	3.01
13	Fertilizing	1,000 loads manure	400.00	1.000	3.27
14	Other expenses	400 acres at 50 cents	200.00	.500	1.64
15	Depreciation, machinery	1860.00 dollars at 10 per cent.	186.00	.466	1.52
16	Depreciation, horses	584.00 dollars at 10 per cent.	58.40	.146	.48
Annual investment			\$2592.21	\$6.480	21.20
17	Interest, machinery	1860.00 dollars at 6 per cent.	111.60	.279	.91
18	Interest, horses	584.00 dollars at 6 per cent.	35.00	.088	.28
19	Interest, an. investment	2592.21 dollars at 6 per cent.	155.53	.388	1.27
20	Interest, land	16880.00 dollars at 6 per cent.	1012.80	2.532	8.29
Total			\$3907.14	\$9.768	31.95

Total investment, \$21,916.21. Average investment per acre, \$54.79. Team work, 496.6 days. Labor 657 days. Value per acre of land, \$42.20.

2. *Value of products.*

1	12229 bushels barley at 44.5 cents; av. 5 years.....	\$5441.90	\$13.604	44.50
2	400 acres straw at \$1.40.....	560.00	1.400	4.57
Total		\$6001.90	\$15.004	49.07

3. *Surplus value.*

Value above costs (profits).....	\$2094.76	\$5.236	17.12
----------------------------------	-----------	---------	-------

Equivalent to 9.56 per cent. on capital invested.

Part IV.—Annual investment, interest and necessary profit at 12 per cent. on same and upon the value of machinery and horses used; also the surplus value of the products above the sum of these expenses. This surplus if credited to land and capitalized at 12 per cent. gives the value of the land for raising barley.

Annual investment	\$2592.21	\$6.480	21.20
Machinery	\$1860.00 at 12 per cent.	223.20	.558
Horses	584.00 at 12 per cent.	70.00	.175
Annual investment	2592.21 at 12 per cent.	311.07	.779
Total expenses less rent.....	\$3196.48	\$7.992	26.13
Surplus credited to land.....	*2805.42	\$7.012	22.94
Total	\$6001.90	\$15.004	49.07

*Capitalized at 12 per cent. equivalent to \$23,371.83 or \$58.43 per acre. This is \$16.13 per acre above the value reported by the farmers.

In relation to the cost of producing 400 acres of barley, as presented in the four preceding tables it is, perhaps, proper to repeat here a few facts to which attention has already been called.

In Table XXXIX., covering six pages, the cost per 10 acres, the total cost of 400 acres and the average cost per acre are presented. Table XL. is made up of the totals of Table XXXIX. Table XLI. is a more complete analysis of Table XXXIX., including besides the expenses in that table, interest on the value of machinery used and upon the sum of the annual investments. These items of expenses were added because they are unavoidable in farming and constitute a proper charge against the products.

It should be noticed that in these three tables the expenses in farming arising from the use of horses for motor power was arrived at by allowing wages, at ruling rates in the respective localities, for team work. It appeared, however, that this is not the proper way in which to treat expenses of this nature. Work horses are usually regarded as capital invested. This being the case, expenses from this source are, with a few exceptions, similar to the expenses of other capital used and should therefore be treated accordingly. Another analysis of the Cost of Production was therefore made, in which the expenses arising from the horses used were treated from this point of view. This analysis is presented in Table XLII., and includes in the expenses wages for man's labor only, while for horses, depreciation and interest on their value and actual yearly cost, per acre, of their maintenance was allowed as expense. This method of treating expenses of this kind does not greatly affect the total cost, but is undoubtedly proper, at least in most cases.

The average cost per acre and bushel of growing barley as computed from Table XXXIX. is shown below:

Items.	One acre.	One Bush.
	\$	Cts.
Plowing .....	.534	1.75
Harrowing, etc. ....	.189	.62
Seeding .....	.101	.33
Cutting .....	.113	.37
Shocking .....	.137	.45
Stacking .....	.290	.94
Threshing, labor .....	.328	1.08
Threshing, machine .....	.306	1.00
Marketing .....	.246	.80
Seed .....	.945	3.09
Taxes .....	.260	.85
Maintenance, horses .....	.920	3.01
Fertilizing	1.000	3.27
Other expenses .....	.500	1.64
Depreciation, machinery .....	.465	1.52
Depreciation, horses .....	.146	.48
Annual investment	\$6.480	21.20
Interest, machinery .....	.279	.91
Interest, horses .....	.088	.28
Interest, an. investment .....	.388	1.27
Interest, land	2.532	8.29
Total	\$9.768	31.95

CORN.—TABLE XLIII.

Cost of production and value of products of 400 acres of corn in 10 acre lots.

OFFICE NO.	PLOWING.				HARROWING AND SEEDING.				CULTIVATING.			
	Cost per acre and bushel.				Cost per acre and bushel.				Cost per acre and bushel.			
	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years
	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	years	Cts.
1.....	8.72	1.82	8.72	2.08	5.83	1.21	5.83	1.40	15.30	3.18	15.30	3.65
2.....	10.74	2.73	10.74	2.54	6.57	1.68	6.57	1.56	13.24	3.38	13.24	3.13
3.....	10.41	2.42	10.41	2.73	6.73	1.57	6.73	1.76	11.50	2.67	11.50	3.02
4.....	11.84	2.95	11.84	3.55	7.52	1.87	7.52	2.25	13.32	3.33	13.32	3.99
5.....	11.01	2.45	11.01	2.64	6.89	1.53	6.89	1.67	11.91	2.63	11.91	2.85
6.....	11.28	2.37	11.28	2.72	6.48	1.36	6.48	1.56	16.92	3.54	16.92	4.08
7.....	9.51	2.11	9.51	2.31	5.95	1.32	5.95	1.45	10.32	2.30	10.32	2.51
8.....	10.75	2.16	10.75	2.41	7.33	1.48	7.33	1.64	11.84	2.38	11.84	2.66
9.....	10.21	2.15	10.21	2.28	7.81	1.66	7.81	1.75	10.12	2.13	10.12	2.26
10.....	9.67	1.99	9.67	2.22	6.57	1.35	6.57	1.52	11.00	2.26	11.00	2.54
11.....	10.56	2.50	10.56	2.61	7.02	1.66	7.02	1.72	11.27	2.67	11.27	2.79
12.....	11.25	2.66	11.25	2.83	6.34	1.50	6.34	1.60	14.74	3.49	14.74	3.71
13.....	10.20	2.42	10.20	2.58	6.16	1.46	6.16	1.56	10.80	2.56	10.80	2.72
14.....	10.32	2.48	10.32	2.67	6.27	1.51	6.27	1.65	12.68	3.04	12.68	3.29
15.....	11.05	2.64	11.05	2.76	7.07	1.63	7.07	1.77	14.97	3.44	14.97	3.74
16.....	9.67	2.26	9.67	2.38	6.18	1.44	6.18	1.52	11.35	2.65	11.35	2.77
17.....	13.14	2.92	13.14	3.35	7.27	1.61	7.27	1.86	13.52	3.00	13.52	3.45
18.....	10.79	2.44	10.79	2.65	7.98	1.81	7.98	1.97	11.72	2.65	11.72	2.88
19.....	11.85	2.68	11.85	2.90	6.63	1.52	6.63	1.63	13.54	3.07	13.54	3.32
20.....	11.36	2.55	11.36	2.81	7.34	1.64	7.34	1.81	13.62	3.06	13.62	3.36
21.....	11.44	2.33	11.44	2.59	5.77	1.17	5.77	1.32	11.17	2.28	11.17	2.53
22.....	11.85	2.69	11.85	2.92	6.94	1.57	6.94	1.72	13.50	3.05	13.50	3.34
23.....	11.90	2.86	11.90	3.04	7.11	1.72	7.11	1.81	14.07	3.38	14.07	3.69
24.....	10.46	2.33	10.46	2.65	5.25	1.17	5.25	1.33	9.44	2.11	9.44	2.40
25.....	9.98	2.37	9.98	2.68	6.96	1.66	6.96	1.86	13.78	3.28	13.78	3.68
26.....	10.71	2.45	10.71	2.72	7.15	1.64	7.15	1.81	12.48	2.86	12.48	3.16
27.....	10.10	2.31	10.10	2.52	6.41	1.47	6.41	1.59	11.48	2.63	11.48	2.85
28.....	11.02	2.51	11.02	2.74	7.50	1.71	7.50	1.87	12.72	2.89	12.72	3.16
29.....	10.12	2.38	10.12	2.55	8.00	1.88	8.00	2.01	13.08	3.07	13.08	3.28
30.....	11.28	2.33	11.28	2.66	6.49	1.35	6.49	1.52	10.92	2.27	10.92	2.57
31.....	11.33	2.49	11.33	2.72	6.93	1.53	6.93	1.66	12.12	2.66	12.12	2.90
32.....	10.32	2.59	10.32	2.69	5.60	1.42	5.60	1.46	10.26	2.58	10.26	2.67
33.....	10.87	2.31	10.87	2.55	6.50	1.37	6.50	1.52	12.23	2.60	12.23	2.87
34.....	11.97	2.47	11.97	2.63	5.67	1.18	5.67	1.24	7.58	1.57	7.58	1.67
35.....	11.42	2.45	11.42	2.62	6.13	1.30	6.13	1.41	11.44	2.45	11.44	2.63
36.....	11.16	2.51	11.16	2.77	6.96	1.57	6.96	1.73	13.17	2.97	13.17	3.24
37.....	10.32	1.99	10.32	2.21	6.11	1.19	6.11	1.31	11.52	2.21	11.52	2.46
38.....	10.81	2.47	10.81	2.64	5.80	1.34	5.80	1.42	11.09	2.53	11.09	2.72
39.....	10.24	2.46	10.24	2.63	7.48	1.80	7.48	1.92	12.60	3.03	12.60	3.23
40.....	9.26	2.18	9.26	2.40	6.42	1.51	6.42	1.67	15.88	3.72	15.88	4.12
Total....	430.89	97.08	430.89	105.95	267.12	60.36	267.12	65.83	494.21	111.57	494.21	121.79
Average..	1.0772	2.427	1.0772	2.649	.6678	1.509	.6678	1.646	1.2355	2.789	1.2355	3.045

CORN.—TABLE XLIII, continued.

Cost of production and value of products of 400 acres of corn in 10 acre lots.

OFFICE NO.	CUTTING.				HUSKING.				SHELLING.			
	Cost per acre and bushel.				Cost per acre and bushel.				Cost per acre and bushel.			
	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years
\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	
1.....	7.65	1.59	7.65	1.82	13.46	2.80	11.76	2.80	7.70	1.60	6.72	1.60
2.....	7.82	1.99	7.82	1.85	9.82	2.49	10.57	2.49	3.93	1.00	4.23	1.00
3.....	5.08	1.18	5.08	1.33	12.47	2.90	11.04	2.90	4.30	1.00	3.81	1.00
4.....	6.87	1.71	6.87	2.06	10.42	2.60	8.68	2.60	4.81	1.20	4.00	1.20
5.....	7.80	1.73	7.80	1.86	12.65	2.80	11.70	2.80	6.42	1.20	5.02	1.20
6.....	7.16	1.49	7.16	1.73	14.34	3.00	12.45	3.00	4.78	1.00	4.15	1.00
7.....	3.32	.74	3.32	.81	13.50	3.00	12.33	3.00	4.50	1.00	4.11	1.00
8.....	7.60	1.53	7.60	1.70	14.94	3.00	13.38	3.00	4.98	1.00	4.46	1.00
9.....	6.67	1.40	6.67	1.49	14.25	3.00	13.44	3.00	4.75	1.00	4.48	1.00
10.....	7.80	1.61	7.80	1.80	14.58	3.00	13.02	3.00	4.86	1.00	4.34	1.00
11.....	8.70	2.06	8.70	2.15	12.69	3.00	12.12	3.00	4.23	1.00	4.04	1.00
12.....	7.52	1.78	7.52	1.89	12.66	3.00	11.91	3.00	4.22	1.00	3.97	1.00
13.....	8.19	1.94	8.19	2.07	12.26	2.89	11.48	2.89	8.88	2.10	8.31	2.10
14.....	8.16	1.96	8.16	2.11	12.48	3.00	11.58	3.00	4.16	1.00	3.86	1.00
15.....	4.79	1.10	4.79	1.20	13.05	3.00	12.00	3.00	4.35	1.00	4.00	1.00
16.....	5.44	1.27	5.44	1.34	12.84	3.00	12.18	3.00	4.28	1.00	4.06	1.00
17.....	8.66	1.93	8.66	2.21	15.30	3.40	13.32	3.40	5.40	1.20	4.70	1.20
18.....	5.14	1.16	5.14	1.27	11.96	2.69	10.98	2.69	4.43	1.00	4.07	1.00
19.....	7.50	1.65	7.50	1.84	13.26	3.00	12.24	3.00	4.42	1.00	4.08	1.00
20.....	6.72	1.51	6.72	1.66	13.35	3.00	12.15	3.00	4.45	1.00	4.05	1.00
21.....	7.70	1.57	7.70	1.74	14.70	3.00	13.26	3.00	4.90	1.00	4.42	1.00
22.....	6.44	1.45	6.44	1.59	13.26	3.00	12.15	3.00	4.42	1.00	4.05	1.00
23.....	5.66	1.36	5.66	1.44	12.48	3.00	11.76	3.00	4.16	1.00	3.92	1.00
24.....	4.56	1.02	4.56	1.16	13.44	3.00	11.82	3.00	4.48	1.00	3.94	1.00
25.....	6.31	1.49	6.31	1.69	12.63	3.00	11.19	3.00	10.42	2.48	9.31	2.49
26.....	7.37	1.68	7.37	1.86	13.11	3.00	11.85	3.00	4.37	1.00	3.95	1.00
27.....	4.71	1.08	4.71	1.17	13.11	3.00	12.06	3.00	4.37	1.00	4.02	1.00
28.....	6.35	1.44	6.35	1.58	13.17	3.00	12.06	3.00	4.39	1.00	4.02	1.00
29.....	8.07	1.89	8.07	2.03	12.32	2.89	11.54	2.89	4.67	1.10	4.37	1.10
30.....	7.44	1.54	7.44	1.75	14.49	3.00	12.75	3.00	6.27	1.30	5.52	1.30
31.....	6.25	1.37	6.25	1.49	13.65	3.00	12.54	3.00	4.55	1.00	4.18	1.00
32.....	5.80	1.45	5.80	1.51	11.94	3.00	11.52	3.00	3.98	1.00	3.84	1.00
33.....	7.03	1.50	7.03	1.60	14.13	3.00	12.81	3.00	4.71	1.00	4.27	1.00
34.....	7.35	1.51	7.35	1.62	14.55	3.00	13.62	3.00	4.85	1.00	4.54	1.00
35.....	5.16	1.10	5.16	1.19	13.98	3.00	13.08	3.00	4.66	1.00	4.36	1.00
36.....	6.72	1.52	6.72	1.67	13.32	3.00	12.09	3.00	4.44	1.00	4.03	1.00
37.....	8.50	1.63	8.50	1.82	15.60	3.00	14.04	3.00	5.20	1.00	4.68	1.00
38.....	5.48	1.25	5.48	1.34	13.11	3.00	12.27	3.00	4.37	1.00	4.09	1.00
39.....	5.77	1.39	5.77	1.49	12.48	3.00	11.70	3.00	4.16	1.00	3.90	1.00
40.....	5.00	1.18	5.00	1.29	12.81	3.00	11.58	3.00	4.27	1.00	3.86	1.00
Total....	266.26	59.85	266.26	65.27	528.56	118.46	484.02	118.46	196.49	44.18	179.73	44.19
Average..	.6656	1.496	.6656	1.632	1.3214	2.961	1.2100	2.961	.4912	1.104	.4493	1.104

CORN.—TABLE XLIII, continued.

Cost of production and value of products of 400 acres of corn in 10 acre lots.

OFFICE NO.	MARKETING.				FERTILIZING.				INTEREST.			
	Cost per acre and bushel.				Cost per acre and bushel.				Cost per acre and bushel.			
	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years
\$	Cts.	\$	Cts.	\$	Cts.	\$	\$	\$	Cts.	\$	Cts.	
1.....	12.98	2.70	11.34	2.70	34.70	7.21	34.70	8.26	30.60	6.36	30.60	7.23
2.....	8.64	2.20	9.30	2.20	35.00	8.91	35.00	8.27	26.10	6.64	26.10	6.17
3.....	13.33	3.10	11.81	3.10	35.00	8.14	35.00	9.18	26.70	6.21	26.70	7.02
4.....	11.62	2.90	9.68	2.90	35.00	8.72	35.00	10.49	31.30	7.81	31.30	9.37
5.....	9.49	2.10	8.78	2.10	34.90	7.72	34.90	8.35	37.20	8.23	37.20	8.83
6.....	10.03	2.09	8.71	2.09	35.00	7.32	35.00	8.44	31.08	6.50	31.08	7.49
7.....	11.70	2.60	10.69	2.60	37.00	8.22	37.00	9.00	30.30	6.80	30.60	7.44
8.....	14.94	3.00	13.38	3.00	38.60	7.75	38.60	8.66	30.00	6.02	30.00	6.73
9.....	15.67	3.30	14.78	3.30	34.50	7.26	34.50	7.70	33.60	7.08	33.60	7.56
10.....	12.64	2.60	11.18	2.60	36.10	7.43	36.10	8.32	33.30	6.85	33.30	7.67
11.....	12.29	2.90	11.72	2.90	35.00	8.29	35.00	8.66	29.40	6.95	29.40	7.27
12.....	11.81	2.80	11.12	2.80	35.00	8.29	35.00	8.82	27.30	6.46	27.30	6.87
13.....	8.46	2.00	7.92	2.00	35.00	8.27	35.00	8.84	33.90	8.01	33.90	8.56
14.....	12.48	3.00	11.58	3.00	35.00	8.41	35.00	9.07	28.08	6.75	28.08	7.27
15.....	13.05	3.00	12.00	3.00	35.00	8.05	35.00	8.76	30.66	7.05	30.66	7.66
16.....	11.12	2.60	10.56	2.60	35.00	8.18	35.00	8.62	25.80	6.02	25.80	6.35
17.....	14.85	3.30	12.93	3.30	35.00	7.78	35.00	8.93	30.90	6.87	30.90	7.88
18.....	15.50	3.49	14.24	3.49	35.00	7.90	35.00	8.59	33.30	7.51	33.30	8.19
19.....	13.26	3.00	12.24	3.00	35.00	7.91	35.00	8.58	27.60	6.24	27.60	6.76
20.....	15.13	3.40	14.36	3.40	35.00	7.86	35.00	8.65	33.00	7.42	33.00	8.15
21.....	11.27	2.30	10.16	2.30	35.00	7.14	35.00	7.93	31.02	6.33	31.02	7.01
22.....	11.93	2.69	10.93	2.69	35.00	7.93	35.00	8.65	32.70	7.39	32.70	8.08
23.....	13.31	3.20	12.54	3.20	35.00	8.41	35.00	8.93	24.48	6.88	24.48	6.24
24.....	12.09	2.70	10.64	2.70	35.00	7.81	35.00	8.88	36.90	8.24	36.90	9.36
25.....	10.94	2.59	7.70	2.60	35.00	8.31	35.00	9.38	22.98	5.46	22.98	6.16
26.....	13.54	3.10	12.24	3.10	35.00	8.01	35.00	8.86	31.50	7.21	31.50	7.97
27.....	9.18	2.10	8.44	2.10	35.90	8.21	35.90	8.93	35.28	8.07	35.28	8.78
28.....	15.80	3.60	14.47	3.60	35.00	7.97	35.00	8.71	31.50	7.17	31.50	7.82
29.....	12.32	2.90	11.54	2.90	35.00	8.23	35.00	8.79	30.90	7.28	30.90	7.76
30.....	15.45	3.20	13.60	3.20	36.70	7.59	36.70	8.64	32.10	6.65	32.10	7.56
31.....	12.28	2.70	11.28	2.70	34.40	7.56	34.40	8.23	30.30	6.66	30.30	7.25
32.....	13.53	3.40	13.05	3.40	34.00	8.55	34.00	8.85	29.34	7.38	29.34	7.64
33.....	13.18	2.80	11.95	2.80	37.80	8.02	37.80	8.85	31.50	6.69	31.50	7.32
34.....	12.12	2.50	11.35	2.50	34.10	7.04	34.10	7.51	35.40	7.29	35.40	7.79
35.....	12.60	2.70	11.77	2.70	35.90	7.70	35.90	8.23	33.90	7.27	33.90	7.77
36.....	12.43	2.80	11.28	2.80	34.70	7.81	34.70	8.62	36.60	8.24	36.60	9.08
37.....	11.96	2.30	10.76	2.30	35.85	6.89	35.85	7.66	31.50	6.06	31.50	6.73
38.....	13.98	3.19	13.08	3.19	33.00	7.55	33.00	8.06	34.80	7.98	34.80	8.50
39.....	11.23	2.70	10.53	2.70	36.20	8.70	36.20	9.28	26.10	6.27	26.10	6.69
40.....	11.96	2.80	10.80	2.80	34.30	8.03	34.30	8.89	30.90	7.23	30.90	8.04
Total.	499.99	112.25	456.43	112.26	1408.65	317.08	1408.65	346.07	1240.12	278.53	1240.12	304.10
Aver.	1.2499	2.806	1.1411	2.809	3.5216	7.927	3.5216	8.652	3.1003	6.963	3.1003	7.602

COST OF PRODUCTION.

CORN.—TABLE XLIII, continued.

Cost of production and value of products of 400 acres of corn in 10 acre lots.

OFFICE NO.	WEAR AND TEAR.				TAXES.				OTHER EXPENSES.			
	Cost per acre and bushel.				Cost per acre and bushel.				Cost per acre and bushel.			
	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years	Acres 1896	Bush 1896	Acres 5 years	Bush 5 years
\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	
1.....	6.81	1.41	6.81	1.62	2.50	.52	2.50	.59	5.00	1.04	5.00	1.18
2.....	3.67	.93	3.67	.86	2.50	.63	2.50	.59	5.00	1.27	5.00	1.19
3.....	6.85	1.59	6.85	1.79	2.50	.58	2.50	.68	5.00	1.16	5.00	1.36
4.....	4.90	1.22	4.90	1.46	2.50	.62	2.50	.74	5.00	1.25	5.00	1.48
5.....	5.20	1.14	5.20	1.24	2.50	.55	2.50	.59	5.00	1.10	5.00	1.18
6.....	5.00	1.05	5.00	1.20	2.50	.52	2.50	.60	5.00	1.05	5.00	1.20
7.....	6.83	1.52	6.83	1.66	2.50	.56	2.50	.61	5.00	1.11	5.00	1.22
8.....	4.00	.80	4.00	.89	2.50	.50	2.50	.56	5.00	1.00	5.00	1.12
9.....	4.65	.98	4.65	1.04	2.50	.52	2.50	.56	5.00	1.04	5.00	1.10
10.....	4.65	.96	4.65	1.07	2.50	.52	2.50	.57	5.00	1.03	5.00	1.14
11.....	4.40	1.04	4.40	1.10	2.50	.59	2.50	.62	5.00	1.18	5.00	1.24
12.....	4.00	1.52	4.00	1.01	2.50	.60	2.50	.63	5.00	1.20	5.00	1.26
13.....	4.50	1.06	4.50	1.13	2.50	.59	2.50	.63	5.00	1.19	5.00	1.27
14.....	4.00	.96	4.00	1.03	2.50	.60	2.50	.64	5.00	1.21	5.00	1.29
15.....	2.70	.62	2.70	.68	2.50	.57	2.50	.62	5.00	1.15	5.00	1.24
16.....	4.48	1.04	4.48	1.10	2.50	.59	2.50	.63	5.00	1.18	5.00	1.26
17.....	5.60	1.25	5.60	1.43	2.50	.55	2.50	.63	5.00	1.11	5.00	1.27
18.....	3.96	.89	3.96	.98	2.50	.56	2.50	.61	5.00	1.13	5.00	1.22
19.....	4.50	1.02	4.50	1.10	2.50	.57	2.50	.61	5.00	1.14	5.00	1.23
20.....	3.50	.78	3.50	.86	2.50	.56	2.50	.61	5.00	1.14	5.00	1.23
21.....	3.30	.68	3.30	.74	2.50	.51	2.50	.56	5.00	1.03	5.00	1.12
22.....	4.50	1.03	4.50	1.12	2.50	.56	2.50	.61	5.00	1.13	5.00	1.22
23.....	4.60	1.10	4.60	1.17	2.50	.60	2.50	.64	5.00	1.20	5.00	1.28
24.....	4.73	1.05	4.73	1.17	2.50	.56	2.50	.64	5.00	1.12	5.00	1.28
25.....	3.85	.91	3.85	1.04	2.50	.59	2.50	.68	5.00	1.19	5.00	1.36
26.....	4.00	.91	4.00	1.01	2.50	.57	2.50	.63	5.00	1.14	5.00	1.27
27.....	5.37	1.22	5.37	1.33	2.50	.57	2.50	.62	5.00	1.15	5.00	1.25
28.....	4.00	.91	4.00	.99	2.50	.57	2.50	.62	5.00	1.15	5.00	1.25
29.....	5.75	1.36	5.75	1.44	2.60	.58	2.50	.63	5.00	1.17	5.00	1.27
30.....	3.60	.75	3.60	.84	2.50	.51	2.50	.59	5.00	1.03	5.00	1.18
31.....	6.63	1.46	6.63	1.59	2.50	.55	2.50	.59	5.00	1.10	5.00	1.19
32.....	4.00	1.01	4.00	1.04	2.50	.62	2.50	.67	5.00	1.24	5.00	1.30
33.....	4.18	.88	4.18	.98	2.50	.53	2.50	.57	5.00	1.07	5.00	1.16
34.....	5.72	1.18	5.72	1.28	2.50	.51	2.50	.57	5.00	1.02	5.00	1.10
35.....	5.50	1.22	5.50	1.26	2.50	.53	2.50	.57	5.00	1.06	5.00	1.14
36.....	5.13	1.15	5.13	1.27	2.50	.56	2.50	.62	5.00	1.13	5.00	1.25
37.....	4.87	.93	4.87	1.04	2.50	.48	2.50	.52	5.00	.96	5.00	1.06
38.....	3.74	.85	3.74	.92	2.50	.57	2.50	.61	5.00	1.14	5.00	1.22
39.....	3.57	.85	3.57	.91	2.50	.60	2.50	.64	5.00	1.21	5.00	1.28
40.....	4.60	1.08	4.60	1.19	2.50	.58	2.50	.64	5.00	1.16	5.00	1.29
Total...	185.84	41.74	185.84	45.58	100.00	22.24	100.00	24.51	200.00	45.08	200.00	49.15
Average.	.4646	1.043	.4646	1.139	.250	.561	.250	.614	.500	1.127	.500	1.229

CORN.—TABLE XLIII, continued.

Cost of production and value of products of 400 acres of corn in 10 acre lots.

OFFICE NUMBER.	TOTAL COST OF RAISING PRODUCTS.				VALUE OF STALK.				VALUE OF CORN.			
	Cost per acre and bushel.				Value per acre and bushel.				Value per acre and bushel.			
	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years	Acre 1896	Bush 1896	Acre 5 years	Bush 5 years
	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.	\$	Cts.
1....	151.25	31.44	146.93	34.98	61.30	12.74	61.30	14.59	112.07	23.3	144.90	34.5
2....	133.03	33.35	134.74	31.85	62.00	15.77	62.00	14.65	90.78	23.1	140.01	33.1
3....	139.87	32.52	136.43	35.87	50.00	11.62	50.00	13.12	98.47	22.9	148.47	33.2
4....	146.10	36.18	140.61	42.09	60.00	23.10	60.00	17.96	92.63	23.1	110.88	33.2
5....	149.97	33.18	147.91	35.37	61.90	13.47	61.90	14.81	110.28	24.4	142.12	34.
6....	149.57	31.29	145.73	35.11	60.00	12.55	60.00	14.94	114.72	24.0	148.15	35.7
7....	140.73	31.28	138.16	33.61	61.60	13.67	61.50	14.96	105.30	23.4	140.56	34.2
8....	152.48	30.62	148.84	33.37	62.05	12.46	62.05	13.91	118.52	23.5	154.31	34.6
9....	149.73	31.52	147.76	32.97	60.45	12.72	60.45	13.48	114.00	24.0	156.80	35.
10....	148.67	30.59	145.13	33.45	61.75	12.70	61.75	14.23	118.09	24.3	154.93	35.7
11....	143.06	33.64	141.73	35.06	60.00	14.18	60.00	14.85	96.02	22.7	133.32	33.
12....	142.34	33.73	140.65	35.42	60.00	14.22	60.00	15.11	98.32	23.3	131.01	33.
13....	145.85	34.49	143.96	36.35	60.00	14.18	60.00	15.15	105.32	24.9	144.93	36.6
14....	141.13	33.92	139.03	36.02	60.00	14.42	60.00	15.54	99.42	23.9	134.71	34.9
15....	144.19	33.15	141.74	35.43	60.00	13.78	60.00	15.00	102.22	23.5	134.40	33.6
16....	133.66	31.23	132.22	32.57	60.00	14.02	60.00	14.78	109.56	25.6	143.72	35.4
17....	157.14	34.92	152.54	38.91	60.00	13.32	60.00	15.31	101.25	22.5	131.71	33.6
18....	147.28	33.23	144.68	35.54	60.00	13.55	60.00	14.74	102.33	23.1	134.31	33.7
19....	145.06	32.80	142.68	34.97	60.00	13.57	60.00	14.71	101.66	23.0	133.41	32.7
20....	150.97	33.92	148.60	36.54	60.00	13.48	60.00	14.81	105.02	23.6	133.65	33.
21....	143.77	29.34	140.74	31.84	62.00	12.65	62.00	14.02	122.50	25.0	160.44	36.8
22....	148.04	33.49	145.56	35.94	61.00	13.81	61.00	15.06	101.21	22.9	133.65	33.
23....	140.27	33.71	138.54	35.34	61.00	14.66	61.00	15.56	93.60	22.5	128.38	32.7
24....	143.85	32.11	140.24	35.57	61.80	13.78	61.80	15.68	105.73	23.6	145.38	36.9
25....	140.35	33.33	134.56	36.62	60.00	14.25	60.00	16.09	104.40	24.8	134.28	36.
26....	146.73	33.57	143.75	36.39	61.00	13.96	61.00	15.44	100.51	23.0	169.85	43.
27....	143.41	32.81	141.27	35.14	69.05	16.00	69.95	17.40	103.13	23.6	148.74	37.
28....	148.95	33.92	146.14	36.35	60.00	13.66	60.00	14.92	100.97	23.0	132.66	33.
29....	147.73	34.73	145.87	36.65	60.00	14.11	60.00	15.07	99.45	23.4	132.43	33.5
30....	152.24	31.52	147.90	34.80	60.25	12.47	60.25	14.17	113.98	23.8	145.35	34.2
31....	145.94	32.08	143.46	34.32	60.50	13.30	60.50	14.47	106.92	23.5	145.46	34.8
32....	135.27	34.24	135.23	35.21	60.50	15.20	60.50	15.75	97.11	24.4	142.08	37.
33....	149.63	31.77	146.64	34.34	60.75	12.89	60.75	14.22	114.45	24.3	148.16	34.7
34....	146.81	30.27	144.80	31.89	69.30	14.28	69.30	15.26	115.91	23.9	157.00	34.6
35....	148.09	31.78	146.16	33.52	60.30	12.94	60.30	13.83	110.91	23.8	156.96	36.
36....	152.13	34.26	149.31	37.05	58.60	13.20	58.60	14.54	105.23	23.7	132.99	33.9
37....	148.93	28.64	143.65	31.12	64.00	12.30	64.00	13.68	125.84	24.2	167.07	35.7
38....	143.68	32.87	141.66	34.62	60.50	13.84	60.50	14.79	109.25	25.0	146.16	36.
39....	137.33	33.01	135.59	34.77	58.25	14.00	58.25	14.91	97.34	23.4	132.60	34.
40....	142.90	33.47	140.10	36.30	57.60	13.46	57.50	14.89	100.77	23.6	130.46	33.3
Total	5818.13	1308.62	5713.27	1403.26	2428.15	554.29	2428.15	596.40	4225.19	957.6	5686.46	1388.1
Aver.	14.543	32.715	14.2832	35.081	6.0704	13.857	6.0704	14.91	10.5639	23.94	14.2161	34.76

CORN.—TABLE XLIII, continued.

Cost of production and value of products of 400 acres of corn in 10 acre lots.

OFFICE NO.	TOTAL VALUE OF PRODUCTS RAISED.				PROFIT.			
	Total value per acre and bushel.				Profit per acre and bushel.			
	Acre 1896 \$	Bush 1896 Cts.	Acre 5 years \$	Bush 5 years Cts.	Acre 1896 \$	Bush 1896 Cts.	Acre 5 years \$	Bush 5 years Cts.
1.....	173.37	36.04	206.20	49.09	22.12	4.60	59.27	14.11
2.....	152.78	38.87	202.01	47.75	19.75	5.02	67.27	15.90
3.....	148.47	34.52	198.47	46.32	8.60	2.00	62.04	10.45
4.....	152.63	46.20	170.88	51.16	7.53	10.02	30.27	9.07
5.....	172.18	37.87	204.02	48.81	22.21	4.69	56.11	13.44
6.....	174.72	36.55	208.15	50.64	25.15	5.26	62.42	15.53
7.....	166.80	37.07	202.06	49.16	26.07	5.79	53.90	15.55
8.....	180.57	36.26	216.36	48.51	28.09	5.64	67.52	15.14
9.....	174.45	36.72	197.25	48.48	24.72	5.20	69.49	15.51
10.....	179.84	37.00	216.68	49.93	31.17	6.41	71.55	16.48
11.....	156.02	36.88	193.32	47.85	12.96	3.04	51.59	12.79
12.....	158.32	37.52	191.01	48.11	15.98	3.79	50.36	12.69
13.....	165.32	39.08	204.93	51.75	19.47	4.59	60.97	15.40
14.....	159.42	38.32	194.71	50.44	18.29	4.40	55.68	14.42
15.....	162.22	37.28	194.40	48.60	18.03	4.13	52.66	13.17
16.....	169.56	39.62	203.72	50.18	35.90	8.39	71.50	17.61
17.....	161.25	35.83	191.71	48.91	4.11	.91	39.17	10.00
18.....	162.33	36.65	194.31	47.74	15.05	3.42	49.63	12.20
19.....	161.66	36.57	193.41	47.41	16.60	3.77	50.73	12.44
20.....	165.02	37.08	193.65	47.81	14.05	3.16	49.05	11.27
21.....	184.50	37.65	222.44	50.32	40.73	8.31	81.70	18.48
22.....	162.21	36.71	194.65	48.06	14.17	3.22	49.09	12.12
23.....	154.60	34.16	189.38	48.26	14.33	3.45	50.84	12.93
24.....	167.53	37.38	207.18	52.58	23.68	5.27	66.94	17.01
25.....	164.40	39.05	194.28	52.09	24.05	5.72	59.72	15.47
26.....	161.51	46.96	230.85	58.44	14.78	13.39	87.10	22.05
27.....	173.08	39.60	216.69	54.40	29.67	6.79	71.42	19.26
28.....	160.97	36.66	192.66	47.92	12.02	2.74	46.52	11.57
29.....	159.45	37.51	192.43	48.57	11.72	2.78	46.56	11.92
30.....	174.23	36.07	205.60	48.37	21.99	4.55	57.70	13.57
31.....	167.42	36.80	205.96	49.27	21.48	4.72	62.50	14.95
32.....	157.61	39.60	202.58	52.15	21.34	5.36	67.35	17.54
33.....	175.20	37.19	208.91	48.92	25.57	5.42	62.27	14.58
34.....	189.21	38.18	226.36	49.86	38.40	7.91	81.56	17.97
35.....	171.21	36.74	217.26	49.83	23.12	4.96	71.10	16.31
36.....	163.83	36.96	191.59	48.44	11.70	2.64	42.25	11.39
37.....	189.84	36.50	231.07	49.38	40.91	7.86	85.42	18.26
38.....	169.75	38.84	206.66	50.79	26.07	5.97	65.00	16.17
39.....	155.59	37.40	190.85	48.91	18.26	4.39	55.26	14.14
40.....	158.27	37.06	187.96	48.69	15.51	3.59	47.86	12.39
Total.....	6653.34	1511.89	8114.61	198.45	325.21	203.27	2401.34	581.24
Average.....	16.633	37.797	20.2865	49.61	2.0880	5.082	6.0033	14.531

TABLE XLIV.—SUMMARY OF TABLE XLIII.

In the tables on this page have been summarized the results in the foregoing table. The tables show the total cost of producing 400 acres of Corn and the average cost per acre and bushel, the total value of products of 400 acres and the average value per acre and bushel. In the analysis of expenses wages was allowed for team work as well as for labor.

(For a more complete analysis of expenses in this case, both when wages is allowed for team work and when horses or their value is treated as capital, see the next two pages.)

Cost of production.

Items.	400 acres.	One	Bush.	400 acres.	One	Bush.
	1896.	acre.		5 years.	acre.	
	\$		Cts.	\$	\$	Cts.
Plowing	430.89	1.077	2.43	430.89	1.077	2.66
Harrowing and seeding	267.12	.668	1.51	267.12	.668	1.65
Cultivating	494.21	1.236	2.79	494.21	1.236	3.05
Cutting	266.26	.667	1.50	266.26	.666	1.63
Husking	528.56	1.321	2.96	484.02	1.210	2.96
Shelling	196.49	.491	1.10	179.73	.449	1.10
Marketing	499.99	1.250	2.81	456.43	1.141	2.81
Fertilizing	1408.65	3.521	7.93	1408.65	3.522	8.65
Interest	1240.12	3.100	6.96	1240.12	3.100	7.60
Wear and tear	185.84	.464	1.04	185.84	.464	1.14
Taxes	100.00	.250	.56	100.00	.250	.61
Other expenses	200.00	.500	1.12	200.00	.500	1.23
	\$5818.13	\$14.545	32.71	\$5713.27	\$14.283	35.08

Value of products.

Value of grain	\$4225.19	\$1.056	23.94	\$5686.46	\$1.422	34.70
Value of straw	2428.15	.607	13.85	2428.15	.607	14.91
Total	6653.34	1.663	37.79	8114.61	2.029	49.61

Profit and loss.

Profit	\$835.21	\$2.088	5.08	\$2401.34	\$6.003	14.531
Loss						
Balance profit	\$-35.21	\$2.088	5.08	\$2401.34	\$6.003	14.531

TABLE XLV.—COST OF PRODUCTION AND VALUE OF 400 ACRES OF CORN.

The data upon which the calculations in the tables on this page are based may also be found in tables 24, 25, 26. "Cost of Production" is shown in section 1. "Value of Products" is shown in section 2. Section 3 shows the "Surplus Value or Cost" as the case may be. In section 4 is presented the "Annual Investment" and the respective amounts of interest and necessary profit at 12 per cent. on same and upon the value of the machinery used, and also the "Surplus Value" above the sum of these expenses. It should be noticed that in this presentation wages has been allowed for team work in place of treating horses, or their value, as other capital.

1. Cost of production.

Items.	400 acres.	One acre.	One Bush.
	\$	\$	Cts.
1 Plowing .....1812 hours at 24 cents	434.88	1.087	2.67
2 Harrowing, etc. ....760 hours at 24 cents	182.40	.456	.112
3 Planting .....464 hours at 24 cents	111.36	.279	.67
4 Cultivating .....2180 hours at 24 cents	523.20	1.308	3.20
5 Cutting, man and team.....720 hours at 24 cents	172.80	.432	1.06
6 Cutting, extra man.....720 hours at 11.8 cents	84.96	.212	.52
7 Husking, etc. ....4544 hours at 11.8 cents	536.19	1.340	3.29
8 Shelling .....16334 bush. at 1 cent	163.34	.408	1.00
9 Marketing .....1945 hours at 24 cents	466.80	1.167	2.86
10 Seed .....76 bush at 40 cents	30.40	.076	.18
11 Taxes .....400 acres at 26 cents	104.00	.260	.63
12 Fertilizing, clover and.....1000 loads manure	500.00	1.250	3.06
13 Other expenses .....400 acres at 50 cents	200.00	.500	1.22
14 Depreciation, machinery .1860.00 dollars at 10 per cent.	186.00	.465	1.14
Annual investment	\$3696.33	\$9.240	22.63
15 Interest, machinery .....1860.00 dollars at 6 per cent.	111.60	.279	.68
16 Interest, an. investment..3696.33 dollars at 6 per cent.	221.78	.555	1.35
17 Interest, land .....16880.00 dollars at 6 per cent	1012.80	2.532	6.20
Total	\$5042.51	\$12.606	30.86

Total investment, \$22436.33. Average investment per acre, \$56.09. Team work, 788 days. Labor, 1314.5 days. Value per acre of land, \$42.20.

2. Value of products.

1 16334 bushels corn at 34.7 cts.; av. 6 years.....	\$5667.90	\$14.169	34.7
2 400 acres stalks at \$3.00.....	1200.00	3.000	7.34
Total	\$6867.90	\$17.169	42.04

3. Surplus value.

Excess of value over cost (profits).....	\$1825.39	\$4.563	11.18
--	-----------	---------	-------

Equivalent to 8.13 per cent. on capital invested.

Part IV.—Annual investment, interest and necessary profit at 12 per cent. on same and upon the value of machinery used; also the surplus value of the products above the sum of these expenses. This surplus if credited to land and capitalized at 12 per cent. gives the value of the land for raising corn.

Annual investment	\$3696.33	\$9.240	22.63
Machinery .....\$1860 at 12 per cent.	223.20	.558	1.36
Annual investment .....\$3696.33 at 12 per cent.	443.56	1.109	2.72
Total expenses less rent.....	\$4363.09	\$10.907	26.71
Surplus credited to land	*2504.81	6.262	15.33
Total	\$6867.90	\$17.169	42.04

*Capitalized at 12 per cent. equivalent to \$20873.42 or \$52.18 per acre. This is \$9.98 per acre above the value reported by the farmers.

TABLE XLVI.—COST OF PRODUCTION AND VALUE OF 400 ACRES OF CORN.

The data upon which the calculations in the table on this page are based may also be found in tables 24, 25, 26. "Cost of Production" is shown in section 1, "Value of Product" is shown in section 2. Section 3 shows the "Surplus Value" above cost. In section 4 is shown the Annual Investment and the respective amounts of interest and the necessary profit at 12 per cent. on same and upon the value of machinery and horses used, also the surplus value of these expenses. In this presentation horses, or their value, have been treated as other capital.

1. Cost of production.

Items.		400 acres.	One acre.	Bush. Cts.
		\$	\$	Cts.
1	Plowing 1812 hours at 11.8 cents	213.81	.534	1.31
2	Harrowing, etc. 760 hours at 11.8 cents	89.68	.224	.55
3	Planting 464 hours at 11.8 cents	54.75	.137	.34
4	Cultivating 2180 hours at 11.8 cents	257.24	.644	1.57
5	Cutting, man and team..... 720 hours at 11.8 cents	84.96	.212	.52
6	Cutting, extra man..... 720 hours at 11.8 cents	84.96	.212	.52
7	Husking and crib..... 4544 hours at 11.8 cents	536.19	1.340	3.29
8	Shelling 16334 bush. at 1 cent	163.34	.409	1.00
9	Marketing 1945 hours at 11.8 cents	229.51	.574	1.41
10	Seed 76 bush at 40 cents	30.40	.076	.18
11	Taxes 400 acres at 26 cents	104.00	.260	.63
12	Maintenance, horses 400 acres at 92 cents	368.00	.920	2.25
13	Fertilizing, clover and..... 1000 loads manure	500.00	1.250	3.06
14	Other expenses..... 400 acres at 50 cents	200.00	.500	1.22
15	Depreciation, machinery..... 1860.00 dollars at 10 per cent.	186.00	.465	1.14
16	Depreciation, horses 584.00 dollars at 10 per cent.	58.40	.146	.36
	Annual investment	\$3161.24	\$7.903	19.35
17	Interest, machinery..... 1860.00 dollars at 6 per cent.	111.60	.279	.68
18	Interest, horses 584.00 dollars at 6 per cent.	35.00	.088	.22
19	Interest, an. investment..... 3161.24 dollars at 6 per cent.	189.67	.474	1.17
20	Interest, land 16880.00 dollars at 6 per cent.	1012.80	2.532	6.20
	Totals	\$4510.31	\$11.276	27.62

Total investment, \$22,485.24. Average investment per acre, \$56.21. Team work, 788 days. Labor, 1314.5 days. Value per acre of land, \$42.20.

2. Value of products.

1	16334 bushels corn at 34.7 cts.; av. 6 years.....	\$5667.90	\$14.169	34.7
2	400 acres stalks at \$3.00.....	1200.00	3.000	7.34
	Total	\$6867.90	\$17.169	42.04

3. Surplus value.

Value above costs (profit)	\$2357.59	\$5.893	14.42
----------------------------------	-----------	---------	-------

Equivalent to 10.44 per cent. on capital invested.

Part IV.—Annual investment, interest and necessary profit at 12 per cent. on same and upon the value of machinery and horses used; also the surplus value of the product above the sum of these expenses. This surplus if credited to land and capitalized at 12 per cent. gives the value of the land for raising corn.

Annual investment	\$3161.24	\$7.903	19.35
Machinery \$1860.00 at 12 per cent.	223.20	.558	1.36
Horses 584.00 at 12 per cent.	70.00	.175	.43
Annual investment 3161.24 at 12 per cent.	378.45	.946	2.31
Total expenses less rent.....	\$3832.89	\$9.582	23.45
Surplus credited to land.....	*3035.01	7.587	18.59
Total	\$6867.90	\$17.169	42.04

*Capitalized at 12 per cent. equivalent to \$25291.06 or \$63.23 per acre. This is \$21.03 per acre above the value reported by the farmers.

In relation to the cost of producing 400 acres of corn as presented in the four preceding tables it is, perhaps, proper to repeat here a few facts to which attention has already been called.

In table XLIII, covering six pages, the cost per ten acres, the total cost of 400 acres and the average cost per acre are presented. Table XLIV is made up of the totals of table XLIII. Table XLV is a more complete analysis of table XLIII, including besides the expenses in that table, interest on the value of machinery used and upon the sum of the annual investments. These items of expense were added because they are unavoidable in farming and constitute a proper charge against the products.

It should be noticed that in these three tables the expenses in farming arising from the use of horses for motor power was arrived at by allowing wages, at ruling rates in the respective localities, for team work. It appeared, however, that this is not the proper way in which to treat expenses of this nature. Work horses are usually regarded as capital invested. This being the case, expenses from this source are, with a few exceptions, similar to the expenses of other capital used and should therefore be treated accordingly. Another analysis of the Cost of Production was therefore made, in which the expenses arising from the horses used were treated from this point of view. This analysis is presented in table XLV and includes in the expenses, wages for man's labor only, while for horses, depreciation and interest on their value and actual yearly cost, per acre, of their maintenance was allowed as expenses. This method of treating expenses of this kind does not greatly affect the total cost, but is undoubtedly proper, at least in most cases.

The average cost per acre and bushel of growing corn as computed from table XLIII is shown below:

Items.	One acre.	One Bush.
	\$	Cts.
Plowing .....	.534	1.31
Harrowing, etc. ....	.224	.55
Planting .....	.137	.34
Cultivating .....	.644	1.57
Cutting, man and team .....	.212	.52
Cutting, extra man .....	.212	.52
Husking and crib	1.340	3.29
Shelling .....	.409	1.00
Marketing .....	.574	1.41
Seed .....	.076	.18
Taxes .....	.260	.63
Maintenance, horses .....	.920	2.25
Fertilizing	1.250	3.06
Other expenses .....	.500	1.22
Depreciation, machinery .....	.465	1.14
Depreciation, horses .....	.146	.36
Annual investment	\$7.903	19.35
Interest, machinery .....	.279	.68
Interest, horses .....	.088	.22
Interest, an. investment .....	.474	1.17
Interest, land	2.532	6.20
Total	\$11.276	27.62

TABLE XLVII.—FACTORS OF COST AND VALUE IN PRODUCING GRAIN.

On these two pages are presented in seven sections the data from which the "Cost of Production" and "Value of Products" as shown in following 5 tables, inclusively, have been computed. This data was obtained directly from the farmers. In section 1 is shown the rate of wages paid per day and month for labor and team work with or without board included. In section 2 is shown the average time needed per acre for properly performing the different parts of the work involved from the time the soil is prepared for seed until the time of threshing. Section 3 shows the data upon which the expenses of threshing, marketing and seed are based. Section 4 shows the number of acres under cultivation and not under cultivation, respectively, owned or controlled by the farmers reporting, and the value per acre in each case and the average value per acre. Section 5 shows the total value of machinery used and the value of the same to each acre under

1. Wages paid per day and month.

Items.	WITH BOARD.		WITHOUT BOARD.	
	Day.	Month.	Day.	Month.
Man and team of two horses.....	\$1.90	\$42.50	\$2.35	\$51.64
Labor, one man .....	.89	18.03	1.18	25.45
One team of two horses	1.01	24.47	1.17	30.19

2. Time needed for doing certain parts of the work.

Items.	Acres per day	Hours per acre	Items.	Acres per day	Hours per acre.
Harrowing grain, man and team	6.00	1.70	Planting corn, one man	4.35	2.30
Harrowing corn, man and team	4.80	2.10	Cultivating corn, one man and team.....	1.51	6.60
Seeding grain, man and team	10.30	.97	Cutting, etc., corn, two men and team...	5.20	1.96
Cutting grain, man and team	8.30	1.20	Cutting, etc., corn, one man, hand.....	1.40	8.30
Shocking grain, one man	8.30	1.20	Cutting, etc., corn, Av. table—I.....		2.50
Stacking grain, two men	8.28	1.25	Husking corn, one man hand .....	.80	12.00

3. Threshing, marketing and seed.

Items.	THRESHING.			MARKETING.			SEED PER ACRE.		
	Bushels per day.	Men employ'd	Per bushel for machine.	Miles of hauling.	Loads per day.	Bush. per load.	Bushels.	Price.	
								1896.	5 y'rs
Wheat.....	1100	12	CTS. 2.	5.6	2	45	1.7	70	70
Corn.....	Shelling		1.3	5.6	2	50	$\frac{3}{8}$	40	45
Oats.....	1800	12	1.	5.6	2	90	2.5	30	30
Rye.....	800	12	2.	5.6	2	50	1.5	50	50
Barley.....	1300	12	2.	5.6	2	50	2.	47	48

cultivation, and the total value of the horses used and the average to each acre owned or controlled. Section 6 shows the data upon which taxes, the cost of maintaining horses and the cost of fertilizing are based.

In Section 7 is presented the data from which the "Value of Products" was arrived at or the yield in bushels per acre and the prices per bushel, also the value per acre of the accompanying straw or stalk. As regards the value of straw and stalks two estimates are given: one giving their value as compared with the commercial value of other products used for the same purpose; the other giving the value reported by the farmers. For details of the greater part of the averages shown here see the preceding tables.

4. Acres in farms, value per acre.

Items.	Acres under cultivation.	Acres not under cultivation.	Total acres, average price.
Acres in farms of 70 farmers reporting.....	7831	7240	15071
Value per acre, average value.....	\$57.90	\$28.00	\$43.54

5. Value of machinery and horses used.

Items.	Value per acre.	Total value.
Machinery: Per acre under cultivation, total value.....	\$2.71	\$21.692
Horses: Per acre in farms, total value.....	.99	15.071

6. Other items and factors of expense.

Items.	Per acre.	Total.
Taxes: Per acre in farm, total paid.....	\$2.36	\$3.557
Maintenance of horses: Per acre in farms, total cost.....	.68	10.248
Manures: Loads per acre, total loads.....	2.40	18.850
Manures: Price per load bought, .90. Labor, cost per load .....		.25
Horses: Number used, 285. Average value.....		52.68

7. Yield per acre, price per bushel, value per acre of straw.

Items.	YIELD. PRICE.		YIELD. PRICE.		VALUE OF STRAW.	
	1896.		5 YEARS.		Estimated in feed and fert. stuffs.	Reported by farmers.
	Bushels.	Cents.	Bushels.	Cents.		
Wheat	18	66	17.5	61.	\$2.10	\$1.60
Corn.....	43	22	42.	31.	5.50	3.85
Oats	41	16	40.	25.5	3.75	2.85
Rye.....	19	33	17.	43.	3.00	2.48
Barley.....	32	28	30.	42.	2.50	1.90

TABLE XLVIII.—COST OF PRODUCTION AND VALUE OF 1,000 ACRES OF WHEAT.

The data upon which the calculations in the table on this page are based may also be found in table XLVII. "Cost of Production" is shown in Section 1. "Value of Products" is shown in Section 2. Section 3 shows the "Surplus Value" above cost. In Section 4 is shown the "Annual Investment" and the respective amounts of interest and necessary profit at 12 per cent. on same and upon the value of the machinery and horses used, also the surplus value of these expenses. In this presentation on horses, or their value, have been treated as other capital.

1. Cost of production.

Items.	1000 acres.	One acre.	Bush.	Per cent.	
1 Plowing	4500 hours at 11.8 cents	\$ 531.00	\$.531	Cts. 3.034	5.668
2 Harrowing, etc.	1700 hours at 11.8 cents	200.60	.200	1.142	2.141
3 Seeding	970 hours at 11.8 cents	114.46	.114	.651	1.222
4 Cutting	1200 hours at 11.8 cents	141.60	.142	.805	1.512
5 Shocking	1000 hours at 11.8 cents	118.00	.118	.694	1.260
6 Stacking, labor	2400 hours at 11.8 cents	283.20	.283	1.617	3.023
7 Threshing, labor	2090 hours at 11.8 cents	246.62	.246	1.405	2.633
8 Threshing, machine	17500 bush. at 1.8 cents	315.00	.315	1.800	3.362
9 Marketing	1930 hours at 11.8 cents	227.74	.228	1.297	2.431
10 Seed	1700 bush. at 70 cents	1190.00	1.190	6.800	12.703
11 Taxes	1000 acres at 23.6 cents	236.00	.236	1.348	2.519
12 Maintenance of horses	1000 acres at 68 cents	680.00	.680	3.886	7.260
13 Fertilizing, clover and	2400 loads manure.....	1000.00	1.000	5.714	10.675
14 Other expenses		500.00	.500	2.857	5.337
15 Depreciation, mach'y ..	\$2,770.00 at 10 per cent.	277.00	.277	1.582	2.957
16 Depreciation, horses ...	990.00 at 10 per cent.	99.00	.099	5.602	1.057
Total annual investment		6160.22	6.159	35.192	65.760
17 Interest, machinery	\$2,770.00 at 6 per cent.	166.20	.166	.948	1.774
18 Interest, horses	990.00 at 6 per cent.	59.40	.059	.339	.634
19 Interest, an. invest.	6,160.22 at 6 per cent.	369.61	.370	2.109	3.945
20 Interest, land	43,540.00 at 6 per cent.	2612.40	2.613	14.925	27.887
Cost 1,000 acres, 17,500 bush. wheat.....		9367.83	9.367	53.513	100.

Investment, 40 acres. \$53,460.22. Average investment per acre, \$3.346. Team work, 1150 days. Labor, 1579 days. Value per acre of land, \$43.54.

2. Value of products.

1 Wheat	17500 bush. at 61 cents	10675.00	10.675	61.000	86.966
2 Straw	1000 acres at 160 cents	1600.00	1.600	9.014	13.034
Total value 1,000 acres wheat.....		12275.00	12.275	70.014	100.

3. Surplus value.

1 Excess of value over cost—profit.....	2907.39	2.907	16.611
---	---------	-------	--------

Equivalent to 5.44 per cent. on capital invested.

Part IV.—Annual investment, interest and necessary profit at 12 per cent. on same and upon the value of machinery and horses used; also the surplus value of the products above the sum of these expenses. This surplus if credited to land and capitalized at 12 per cent. gives the value of the land for raising wheat.

Annual investment	6160.22	6.160	35.192
Machinery	332.40	.332	1.905
Horses	118.80	.119	.674
Annual investment	739.22	.739	4.204
Total expenses less rent	7350.64	7.350	41.975
Surplus credited to land.....	*4924.36	4.925	28.039
Total	12275.00	12.275	70.014

*Capitalized at 12 per cent. equivalent to \$41,036.33 or \$41.04 per acre. This is \$2.53 per acre below the value reported by the farmers.

TABLE XLIX.—COST OF PRODUCTION AND VALUE OF 1,000 ACRES OF OATS.

The data upon which the calculations in the table on this page are based may also be found in table XLVII. "Cost of Production" is shown in section 1. "Value of Products" is shown in section 2. Section 3 shows the "Surplus Value" above cost. In section 4 is shown the "Annual Investment" and the respective amounts of interest and necessary profit at 12 per cent. on same and upon the value of the machinery and horses used, also the surplus value of these expenses. In this presentation horses, or their value, have been treated as other capital.

1. Cost of production.

Items.	1000 acres.	One acre.	One bush.
	\$	\$	Cts.
1 Plowing 4500 hours at 11.8 cents	\$531.00	.531	1.327
2 Harrowing, etc. 1700 hours at 11.8 cents	200.00	.200	.500
3 Seeding 970 hours at 11.8 cents	114.46	.114	.286
4 Cutting 1200 hours at 11.8 cents	141.60	.142	.354
5 Shocking 1200 hours at 11.8 cents	141.60	.142	.354
6 Stacking, labor 2400 hours at 11.8 cents	283.20	.283	.708
7 Threshing, labor 3330 hours at 11.8 cents	392.94	.393	.982
8 Threshing, machine 40000 bushels at 1 cent	400.00	.400	1.000
9 Marketing 2220 hours at 11.8 cents	261.96	.262	.655
10 Seed 2500 bushels at 30 cents	750.00	.750	1.875
11 Taxes 1000 acres at 23.6 cents	236.00	.236	.590
12 Maintenance of horses..... 1000 acres at 68 cents	680.00	.680	1.700
13 Fertilizing, clover and..... 2400 loads manure.....	1000.00	1.000	2.500
14 Other expenses	500.00	.500	1.250
15 Depreciation, value of mach. ..\$2,770.00 at 10 per cent.	277.00	.277	.693
16 Depreciation, value of horses.. 990.00 at 10 per cent.	99.00	.099	.248
Annual investment	6008.76	6.009	15.022
17 Interest on value of mach.... \$2,770.00 at 6 per cent.	166.20	.166	.415
18 Interest on value of horses.... 990.00 at 6 per cent.	59.40	.059	.148
19 Interest on an. investment.... 6,008.76 at 6 per cent.	360.53	.361	.902
20 Interest on val. 1000 acres land \$43,540.00 at 6 per cent.	2612.40	2.612	6.531
Cost 1000 acres oats.....	9207.29	9.207	23.018

Investment 1000 acres, \$53,308.76. Average investment per acre, \$53.31. Team work, 1179 days. Labor, 1652 days. Value per acre of land, \$43.64.

2. Value of products.

1 Oats, 40,000 bush., at 25.5 cents.....	10200.00	10.200	25.50
2 Straw, 1,000 acres, at \$2.85.....	2850.00	2.850	7.12
Total value 1,000 acres oats.....	13050.00	13.050	32.62

3. Balance between tables I. and II.

1 Excess of value over cost—profits.....	3842.71	3.843	9.60
--	---------	-------	------

Equivalent to 7.02 per cent. on capital invested.

Sec. 4.—Annual investment, interest and necessary profit at 12 per cent. on same and upon the value of machinery and horses used; also the surplus value of the products above the sum of these expenses. This surplus if credited to land and capitalized at 12 per cent. gives the value of the land for raising oats.

1 Annual investment	6008.76	6.009	15.02
2 Machinery \$2,770.00 at 12 per cent.	332.40	.332	.83
3 Horses 990.00 at 12 per cent.	118.80	.119	.30
4 Annual investment 6,008.00 at 12 per cent.	721.06	.721	1.80
Total expenses less rent.....	7181.02	7.181	17.95
5 Surplus credited to land.....	*5868.98	5.869	14.67
Total	13050.00	13.050	32.62

*Capitalized at 12 per cent. equivalent to \$48,908.17 or \$48.91 per acre. This is \$5.37 per acre above the value reported by the farmers.

TABLE L.—COST OF PRODUCTION AND VALUE OF 1,000 ACRES OF RYE.

The data upon which the calculations in the table on this page are based may also be found in table XLVII. "Cost of Production" is shown in Section 1. "Value of Products" is shown in Section 2. Section 3 shows the "Surplus Value" above cost. In Section 4 is shown the "Annual Investment" and the respective amounts of interest and necessary profit at 12 per cent. on same and upon the value of the machinery and horses used, also the surplus value of these expenses. In this presentation horses, or their value, have been treated as other capital.

1. *Cost of production.*

Items.	1000 acres.	One acre.	One Bush.
	\$	\$	Cts.
1 Plowing 4500 hours at 11.8 cents	531.00	.531	3.123
2 Harrowing, etc. 1700 hours at 11.8 cents	200.00	.200	1.176
3 Seeding 970 hours at 11.8 cents	114.46	.114	.673
4 Cutting 1200 hours at 11.8 cents	141.60	.142	.833
5 Stacking 1200 hours at 11.8 cents	141.60	.142	.833
6 Stacking, labor 2400 hours at 11.8 cents	283.20	.283	1.666
7 Threshing, labor 2975 hours at 11.8 cents	351.05	.351	2.065
8 Threshing, machine 17000 bush. at 1.8 cents	306.00	.306	1.800
9 Marketing 1700 hours at 11.8 cents	190.60	.191	1.121
10 Seed 1500 bush. at 50 cents	750.00	.750	4.412
11 Taxes 1000 acres at 23.6 cents	236.00	.236	1.388
12 Maintenance, horses 1000 acres at 68 cents	680.00	.680	4.000
13 Fertilizing, clover and 2400 loads manure.....	750.00	.750	4.412
14 Other expenses	500.00	.500	2.941
15 Depreciation of machinery.....\$2,770.00 at 10 per cent.	277.00	.277	1.629
16 Depreciation of horses..... 990.00 at 10 per cent.	99.00	.099	.582
Total annual investment.....	5551.51	5.552	32.654
17 Interest on machinery..... \$2,770.00 at 6 per cent.	166.20	.166	.977
18 Interest on horses..... 990.00 at 6 per cent.	59.40	.059	.350
19 Interest on an investment..... 5,551.51 at 6 per cent.	333.09	.333	1.959
20 Interest on 1000 acres land..... 43,540.00 at 6 per cent.	2612.40	2.612	15.365
Cost 1000 acres rye.....	8722.60	8.722	51.305

Investment 1000 acres, \$52,851.51. Average investment per acre, \$52.85. Team work, 1127 days. Labor, 1664.5 days. Value per acre of land, \$43.54.

2. *Value of products.*

1 Rye, 17,000 bush., at 45 cents.....	7650.00	7.650	45.00
2 Straw, 1,000 acres, at \$2.75.....	2750.00	2.750	16.18
Total value 1,000 acres rye.....	10400.00	10.400	61.18

3. *Balance between tables I. and II.*

1 Excess of value over cost—profit.....	1677.40	1.678	9.87
---	---------	-------	------

Equivalent to 3.2 per cent. on capital invested.

Sec. 4.—Annual investment, interest and necessary profit at 12 per cent. on same and upon the value of machinery and horses used; also the surplus value of the products above the sum of these expenses. This surplus if credited to land and capitalized at 12 per cent. gives the value of the land for raising rye.

Annual investment	5551.51	5.552	32.66
Machinery \$2,770.00 at 12 per cent.	332.40	.332	1.95
Horses 990.00 at 12 per cent.	118.80	.119	.70
Annual investment 5,551.51 at 12 per cent.	666.18	.666	3.92
Total expenses less rent.....	6668.89	6.669	39.23
Surplus credited to land.....	*3731.11	3.731	21.95
Total	10400.00	10.400	61.18

*Capitalized at 12 per cent. equivalent to \$31,092.58 or \$31.09 per acre. This is \$12.45 per acre below the value reported by the farmers.

TABLE LI.—COST OF PRODUCTION AND VALUE OF 1,000 ACRES OF BARLEY.

The data upon which the calculations in the table on this page are based may also be found in table XLVII. "Cost Production" is shown in Section 1. "Value of Products" is shown in Section 2. Section 3 shows the "Surplus Value" above cost. In Section 4 is shown the "Annual Investment" and the respective amounts of interest and necessary profit at 12 per cent. on same and upon the value of the machinery and horses used, also the surplus value of these expenses. In this presentation horses, or their value, have been treated as other capital.

1. Cost of production.

Items.		1000 acres.	One acre.	Per Bush.
		\$	\$	Cts.
1	Plowing 4500 hours at 11.8 cents	531.00	.531	1.713
2	Harrowing, etc. 1700 hours at 11.8 cents	200.00	.200	.645
3	Seeding 970 hours at 11.8 cents	114.46	.114	.369
4	Cutting 1200 hours at 11.8 cents	141.60	.142	.457
5	Shocking 1200 hours at 11.8 cents	141.60	.142	.457
6	Stacking, labor 2400 hours at 11.8 cents	283.20	.283	.913
7	Threshing, labor 3340 hours at 11.8 cents	394.12	.394	1.271
8	Threshing, machine 31000 bush. at 1.6 cents	496.00	.496	1.600
9	Marketing 3100 hours at 11.8 cents	365.80	.366	1.180
10	Seed 2000 bush. at 48 cents	960.00	.960	3.097
11	Taxes 1000 acres at 23.6 cents	236.00	.236	.761
12	Maintenance of horses 1000 acres at 68 cents	680.00	.680	2.194
13	Fertilizing, clover and 2400 loads manure.....	1000.00	1.000	3.226
14	Other expenses 500.00	500.00	.500	1.613
15	Depreciation on val. of mach. \$2,770.00 at 10 per cent.	277.00	.277	.894
16	Depreciation on value of horses 990.00 at 10 per cent.	99.00	.099	.319
	Annual investment	6419.78	6.420	20.709
17	Interest, value of machinery \$2,770.00 at 6 per cent.	166.20	.166	.536
18	Interest, value of horses 990.00 at 6 per cent.	59.40	.059	.192
19	Interest, an. investment 6,419.78 at 6 per cent.	385.19	.386	1.242
20	Interest, value 1,000 acres land. 43,540.00 at 6 per cent.	2612.40	2.612	8.427
	Cost 1,000 acres of barley.....	9642.97	9.643	31.106

Total investment 1,000 acres, \$53,719.78. Average investment per acre, \$53.72. Team work, 1267 days. Labor, 1841 days. Value per acre of land, \$43.54.

2. Value of products.

1	Barley, 31,000 bush., at 40.5 cents.....	12555.00	12.565	40.50
2	Straw, 1,000 acres, \$1.90.....	1900.00	1.900	6.13
	Total value 1,000 acres barley.....	14455.00	14.455	46.63

3. Balance between tables I. and II.

1	Excess of value over cost—profit	4812.03	4.812	15.52
---	--	---------	-------	-------

Equivalent to 8.96 per cent. on capital invested.

Sec. 4.—Annual investment, interest and necessary profit at 12 per cent. on same and upon the value of machinery and horses used; also the surplus value of the products above the sum of these expenses. This surplus if credited to land and capitalized at 12 per cent. gives the value of the land for raising barley.

Annual investment	6419.78	6.420	20.709
Machinery \$2,770.00 at 12 per cent.	332.40	.332	1.072
Horses 990.00 at 12 per cent.	118.80	.119	.383
Annual investment 6,419.78 at 12 per cent.	770.38	.770	2.484
Total expenses less rent.....	7641.36	7.641	24.648
Surplus credited to land.....	*6813.64	6.814	21.980
Total	14455.00	14.455	46.623

*Capitalized at 12 per cent. equivalent to \$56,780.33 or \$56.78 per acre. This is \$13.24 per acre above the value reported by the farmer.

TABLE LII.—COST OF PRODUCTION AND VALUE OF 1,000 ACRES OF CORN.

The data upon which the calculations in the table on this page are based may also be found in table XLVII. "Cost of production" is shown in section 1. "Value of products" is shown in section 2. Section 3 shows the "surplus value" above cost. In section 4 is shown the "annual investment" and the respective amounts of interest and necessary profit at 12 per cent. on same and upon the value of the machinery and horses used, also the surplus value of these expenses. In this presentation horses, or their value, have been treated as other capital.

1. *Cost of production.*

Items.	1,000 acres	One a cre.	Per bushel. Cts.	Per cent.
1 Plowing..... 4,500 hours at 11.8 cents	\$531 00	\$.531	1.265	4.636
2 Harrowing, etc..... 2,100 hours at 11.8 cents	247 80	.248	.588	2.165
3 Planting..... 1,400 hours at 11.8 cents	165 20	.165	.393	1.440
4 Cultivating..... 6,600 hours at 11.8 cents	778 80	.779	1.853	6.801
5 Cutting..... 6,550 hours at 11.8 cents	772 90	.773	1.838	6.748
6 Husking..... 12,500 hours at 11.8 cents	1,475 00	1.475	3.512	12.877
7 Marketing..... 4,200 hours at 11.8 cents	495 60	.496	1.180	4.330
8 Shelling..... 42,000 bush. at 1.3 cents	546 00	.546	1.300	4.767
9 Seed..... 188 bush. at 40 cents	75 20	.075	.180	.656
10 Taxes..... 1,000 acres at 23.6 cents	236 00	.236	.562	2.080
11 Maintenance of horses.... 1,000 acres at 68 cents	680 00	.680	1.620	5.936
12 Fertilizing, clover and 2,400 loads manure.....	1,250 00	1.250	2.978	10.912
13 Other expenses.....	500 00	.500	1.192	4.365
14 Depreciation, value of mach'y, \$2,770.00 at 10 p. ct.	277 00	.277	.660	2.417
15 Depreciation, value of horses.. 990.00 at 10 p. ct.	99 00	.099	.236	.864
Total annual investment.....	\$8,129 50	\$8.130	19.357	70.974
16 Interest on value of machinery. \$2,770 00 at 6 p. ct.	166 20	.166	.395	1.449
17 Interest on value of horses.... 990.00 at 6 p. ct.	59 40	.059	.141	.515
18 Interest on annual investment.. 8,129.50 at 6 p. ct.	487 68	.488	1.161	4.260
19 Interest on val. 1000 acres land.. 43,540.00 at 6 p. ct.	2,612 40	2.612	6.220	22.802
Cost 1,000 acres corn.....	\$11,455 18	\$11.455	27.275	100

Investment 1,000 acres, \$55,429.50. Average investment per acre \$55.42. Team work, 2,036 days. Labor, 3765 days. Value per acre of land, \$43.54.

2. *Value of products.*

1 Corn.....42,000 bush. at 31.5 cents; av. price 5 yrs.	\$13,230 00	\$13.230	31.500	77.458
2 Stalks..... 1,000 acres at \$3.85 cents.....	3,850 00	3.850	9.190	22.542
Total value.....	\$17,080 00	\$17.080	40.691	100

Equivalent to 3.08 per cent. on capital invested.

3. *Balance between tables I. and II.*

1 Excess of value over cost = profit =.....	\$5,624 82	\$5.624	13.38
---	------------	---------	-------

* Equivalent to 10.15 per cent. on capital invested.

SEC. 4.—Annual investment, interest and necessary profit at 12 per cent. on same and upon the value of machinery and horses used; also the surplus value of the products above the sum of these expenses. This surplus, if credited to land and capitalized at 12 per cent., gives the value of the land for raising corn.

1 Annual investment.....	\$8,129 50	\$8.130	19.36
2 Machinery..... \$2,770.00 at 12 per cent.	332 40	.332	.79
3 Horses..... 990.00 at 12 per cent.	118 80	.119	.29
4 Annual investment..... 8,129.50 at 12 per cent.	975 54	.975	2.32
Total expenses, less rent.....	\$9,556 24	\$9.556	22.76
Surplus credited to land.....	7,523 76	7.524	17.91
Total.....	\$17,080 00	\$17.080	40.69

Capitalized at 12 per cent., equivalent to \$62,698.00 or \$62.70 per acre. This is \$19.16 per acre above the value reported by the farmers.

While each of the preceding tables has been briefly explained, little has been said regarding their presentation as a whole. A few explanations along this line may therefore be in order.

Broadly speaking, the tables are made up of such data relating to the cost of growing grain and the value of the same, as was inquired about in our schedules and furnished by farmers, as well as of the deductions and calculations that have been made from this data. The tables are so arranged that they may be divided into three almost complete parts.

Part one consists of Tables I to XXIII, inclusive. The first three of these contain the data furnished by 40 farmers and includes all items which enter into or has been taken into account in computing the "Cost of Production" and "Value of Products" in this case. The remaining twenty tables include the deductions and figures made from this data and show the cost and value of 40 acres each of Wheat, Oats, Rye, Barley and Corn, and the amount per acre and bushel in each case.

Part two consists of Tables XXIV to XLVI, inclusive. The first three tables show the basic data and includes 400 reports. The remaining twenty include the facts drawn from this data and show the results of 400 acres of each crop in the calculations. As to the arrangement of the facts and methods of treating expenses, this part is identical with Part One.

Part three consists of Tables XLVII to LII, inclusive. The scope of this part is more limited than of the other parts, but the principles involved are the same. The first table includes the reports of 70 farmers and covers the basic data. The remaining five tables show one analysis of the cost and value of 1,000 acres of each crop included.

We see from this that the foregoing tables may be divided into three independent parts; that they include 510 reports; that these reports are compiled in seven tables practically, and as investigation will show, only in three tables, and that the calculations and conclusions cover forty-five tables. The facts in the basic tables constitute, so to say, the center upon which the whole investigation has been made to turn. If correct, the results must also be correct, as precautions were taken against errors in computing the cost and value from them. Their importance seemed to warrant further analysis. For this purpose the 510 reports in question were compiled in one table and presented on the next two pages.

TABLE LIII.—FACTORS OF COST AND VALUE IN PRODUCING GRAIN.

This table includes the reports of 510 farmers or the data upon which the preceding parts of this investigation are based. While thus, this data has already appeared either in groups, or in detail in connection with the calculations based upon it, further analysis was thought necessary. For this purpose it was compiled into one table and presented here. The table is divided into seven sections and briefly described as follows:

In Section 1 is shown the rate of wages paid per day and month for labor and team work, with or without board included. In Section 2 is shown the average time needed per acre for properly performing the different parts of the work involved from the time the soil is prepared for seed until the time of threshing. Section 3 shows the data upon which the expenses of threshing, marketing and seed are based. Section 4 shows the number of acres under cul-

1. Wages paid, per day and month.

Items.	WITH BOARD.		WITHOUT BOARD.		DIFFER- ENCE. Day..
	Day.	Month.	Day.	Month.	
Man and team of two horses.....	\$1.851	\$41.692	\$2.390	\$52.000	\$0.439
Labor, one man .....	.90	17.640	1.183	26.115	.284
Team of two horses.....	.951	24.062	1.207	25.885	.255

2. Time needed for doing certain parts of the work.

Items.	Acres per day.	Hrs. per acre.	Items.	Acres per day.	Hrs. per acre.
Plowing, man and team ..	2.210	4.530	Planting corn, hand, one man	4.025	2.490
Harrowing for corn, man and team	5.128	1.950	Cultivating corn, man and team	1.750	5.720
Harrowing for grain, man and team	6.135	1.630	Cutting corn, two men and team	5.500	1.820
Seeding grain, man and team	11.111	.900	Cutting corn, hand, one man	1.272	7.860
Cutting grain, man and team	11.145	.987	Cutting corn, av. tables 1, 24	2.020	4.960
Shocking grain, one man..	8.453	1.183	Husking, etc., corn, hand, one man .....	.883	11.320
Stacking grain, two men..	7.962	1.256			
Planting corn, man and team	8.210	1.210			

3. Threshing, Marketing and Seed.

Items.	THRESHING.			MARKETING.			SEEDS PER ACRE.		
	Bushels per day.	No. men em- ployed.	Per Bush for machine.	Miles of hauling.	Loads per day.	Bush. per load.	Bushels.	PRICE.	
								1896.	6 years
Wheat	1018	13.6	1.16	6.30	2.02	43	1.7	Cts.	Cts.
Corn, shelling			1.3	6.30	2.02	44	1-5	70	40
Oats	1875	13.6	.89	6.30	2.02	76	2.5	30	35
Rye	977	13.6	1.14	6.30	2.02	46	1.6	45	50
Barley.....	1486	13.6	1.14	6.30	2.02	47	2.1	40	45

tivation and not under cultivation respectively, owned or controlled by the farmers reporting, and the value per acre in each case and the average value per acre. Section 5 shows the total value of the machinery used and the value of same to each acre under cultivation; the total value of the horses used and the average value to each acre owned or controlled. Section 6 shows the data upon which taxes, the cost of maintaining horses and the cost of fertilizing are based.

In Section 7 is presented the data from which the "Value of Products" was arrived at or the yield in bushels per acre and the prices per bushel, also the value per acre of the accompanying straw or stalk. As regards the value of straw and stalk two estimates are given: one giving their value as compared with the commercial value of other products used for the same purpose; the other giving the value reported by the farmers.

4. Acres in farms, value per acre.

Items.	Acres under cultivation.	Acres not under cultivation.	Total acres, average prices.
Acres in farms of 510 farmers reporting	47,316	33,750	81,066
Value per acre, average value	\$53.58	\$30.58	\$44.00

5. Value of horses and machinery used.

Items.	Value per acre.	Total value.
Machinery: per acre under cultivation, total value.....	\$4.29	\$203,234
Horses: per acre in farms, total value.....	1.25	110,999

6. Other items and factors of expense.

Items.	Per acre.	Total.
Taxes: per acre in farm, total paid.....	\$0.256	\$20,750
Maintenance of horses: per acre in farm, total cost.....	.867	70,240
Manures: loads per acre, total loads.....	2.300	108,000
Manures: price per load brought, \$0.70, labor, cost per load.....		\$0.30
Horses: number used, 1,945, average value.....		57.00

7. Yield per acre, price per bushel, value per acre of straw.

Items.	YIELD. 1896.		YIELD. 6 YEARS.		Value of straw Reported by farmers.
	Bushels.	Cents.	Bushels.	Cents.	
Wheat	18	65	17.5	61	\$1.40
Corn	44	24	42	34	3.50
Oats	41	17	39	26	2.45
Rye	20	33	18	45	2.20
Barley	32	28	30	43	1.60

ANALYSIS.

As has been said the Cost and Value as presented in the foregoing tables was computed from the data, relating thereto, reported by 510 farmers. It has been seen that of these 510 reports, 40 constitute the basis for Tables I to XXIII, inclusive; that 400 reports make up the basis for Tables XXIV to XLVI, inclusive, and that 70 reports make up the Tables XLVII to LII, inclusive.

As considerable importance has been given to the data in these reports further explanations were thought necessary. For this purpose it was again compiled and, as a whole, presented in the foregoing table.

The table is divided into seven sections, each covering such parts of the whole as could conveniently be classed under the same head.

In the schedules, the farmers were requested to report the daily and monthly rate of wages, with and without board included, paid for labor and team work in their respective neighborhoods. It should be borne in mind that the method here adopted for determining the expense of labor, differs somewhat from that usually employed. In most cases where information as to the proportion of this expense to the total cost is desired for statistical purposes, it is obtained directly from the producers' accounts. But for obvious reasons this was impractical in this case.

Another method was therefore adopted. It was assumed that the actual labor involved in raising a given area of a certain crop, could be classified according to its nature and that it was possible to ascertain the time required to complete each class or kind of this labor. Accordingly the farmers were asked to give, in detail, the quantity of labor required, on the average, to properly raise a given area of grain. The farmers complied with this. The information thus obtained in addition to the wages paid served as a basis from which the expenses of labor were arrived at. This readily

explains why the questions relating to wages were included in the schedule.

The wages paid farm hands was reported by all whose schedules are included here and the rate reported was apparently correct. Those who hired labor gave the wages paid by them. Others gave the rate paid in their neighborhood.

As regards the wages of team work this can hardly be said. While the questions were answered, in most cases, the wages reported were not always that paid for farm work. The rate given was often that paid by the town or county for road making and other work of that kind. It appeared that teams or horses are seldom hired for wages for actual farm work because each farmer kept about as many work horses as he found necessary for doing his own work. As this seemed to be the case in most localities it is, of course, plain that no accurate rate of wages could be reported, at least, in many cases.

This suggests that, taking everything into consideration, wages is hardly the proper kind of compensation for team work on the farm unless expressly hired at a stipulated rate. Farmers who own their horses and use them only, so to say, on their own land, usually regard them as a part of their capital. In fact that is also the proper way to look at them. The horse is in many respects to the farmer what steam is to the manufacturer. The expenses from the use of both in production should be met by allowing, besides for the capital consumed, depreciation and interest and perhaps insurance for risks on their value. As has been seen this method of arriving at the expense of the use of horses, etc., for motor power, has been used in many of the analyses.

Section 1 shows the rate of wages paid. From this it appears that, man and team, with board and feed included as part payment, received on the average \$1.85 per day, and that without board and feed \$2.39 per day was the daily wage; that men were paid \$.90 per day when board was included and \$1.18 without board. The wages paid for team of two horses is also given, as well as the amount paid per month in each case.

In Section 2 in the foregoing table is presented the time required for a given number of men and team, when such are necessary, to properly perform the following distinct parts of the labor involved in raising grain: Plowing, Harrowing, etc., Seeding, Cutting, Shocking, Stacking grain and for Harrowing, Planting, Cultivating, Cutting and Husking Corn. As already explained the purpose of collecting this data was to obtain a basis upon which to compute the cost of these operations.

The greater portion of the answers were, of course, estimated, but many farmers kept the schedules during the season and made observations as the work progressed. The answers, however, were about the same in both cases. That such should be the case is only what might be expected. As a rule, the farmers are as competent to judge of the work in their line, as other business men of work that concerns their business. In making their reports the farmers were dealing in quantities with which they were thoroughly acquainted and with which it is a part of their regular duties to form opinions. That, under normal conditions, all competent farmers are able, with a little thought, to give, approximately, the time required for each of the different parts of the work, will hardly be denied. The returns were also carefully edited and all those which appeared defective excluded. In view of this it is only justice to say that the figures shown represent a fair average, and will, if correctly used, lead to reliable results.

Plowing is the first operation in order. The time per acre required for this varies with the character of the land, the kind of plow, and number of horses used, etc. This is plainly illustrated in some of the tables, particularly in Nos. IV and XXIV. In some cases 1.5 acres were given as a fair day's work, in other cases twice this number were finished. The average number of hours required per acre is 4.53. With \$1.18 per day for man and \$2.39 per day for man and team, as the rate of wages paid, the cost per acre under each of the two methods of analyzing expenses used in the foregoing tables is as follows:

Plowing one acre, 4.53 hours at 11.8 cents, one man.....	\$0.535
Plowing one acre, 4.53 hours at 24 cents, man and team.....	1.087

From this it appears that the cost is greatly affected by the method of allowing wages. When wages is paid for man only the cost is 53.5 cents per acre. When wages is paid for both man and team the cost is \$1.09 or more than twice as great. This difference, however, is more apparent than real, as the lower cost in the first place is, as is seen later, and also in the tables, largely offset by maintenance of horses and by interest and depreciation which in such cases should be added to the cost and which appear in separate items.

Harrowing and fitting is the next operation in order. This includes all the work of fitting the plowed field for seed, and when practiced, of dragging after seeding. The causes which effect the amount of work that can be done in a given time when plowing are also effective in this case. Some soils require more work than others. All kinds of harrows and tools used are not equally efficient. Three horses to the team also means, as a rule, more work done than when only two are used. The table shows that 1.63 or practically one and two-thirds hours are on the average required for properly fitting one acre of plowed land for the seed. On this basis and with wages the same as in plowing the cost in each case is as follows:

Harrowing, etc., one acre, 1.63 hrs. at 11.8 cents.....	\$0.192
Harrowing, etc., one acre, 1.63 hrs. at 24 cents.....	.391

In the former case the cost is somewhat over 19 cents per acre, in the latter about 39 cents per acre. The difference in cost between the two methods holds good in all cases where both man and teams are employed or required for the work.

Seeding is next. This was in all cases done with machines. Different kinds of seeders or drills were used and as these vary in their capacity for work as well as men and horses and were employed under many different conditions there was also a difference in the area covered within a given time. The average time per acre was .90 or nine-tenth hour and the cost is:

Seeding one acre, .90 hrs. at 11.8 cents, man.....	\$0.106
Seeding one acre, .90 hrs. at 24 cents, man and team.....	.216

The cost of seeding under the two methods is thus 10.6 cent and 21.6 cents respectively.

CUTTING: Wheat, Oats, Rye and Barley require little or no work from the time of seeding until ripe or ready for the binder. The next work in order therefore is cutting and in this is included the actual work of the driver and team. Binders and two or three horses were used in all cases and the average time required to cut one acre is seen to be .987 or almost one hour. The cost in each case is as follows:

Cutting one acre, .987 hrs. at 11.8 cents, man.....	\$0.117
Cutting one acre, .987 hrs. at 24 cents, man and team.....	.287

With wages allowed for one man only the cost is 11.7 cents per acre. With wages for both man and team the cost is 23.7 cents per acre.

SHOCKING: When cut the grain is usually put up into shocks and thus left until stacking begins. It seemed from the returns that in most cases one man could shock up the grain as fast as cut by one binder. There were a few exceptions to this rule and the effect of these exceptions was to make the average time for shocking a trifle higher than for cutting or 1.183 hours.

Shocking one acre, 1.183 hours at 11.8 cents.....	\$0.140
---	---------

According to this the average cost per acre of shocking the grain is 14 cents.

STACKING: This includes all the work in connection with hauling the grain from the field where shocked to the place for stacking as well as the stacking itself. The cost is mostly affected by the distance of hauling and is based upon the wages and time required for two men and one team. According to the table the time needed per acre is 1.256 hours. The cost therefore is as follows:

Stacking one acre, 1.256 hrs. at 23.6 cents, two men.....	\$0.296
Stacking one acre, 1.256 hrs. at 24 cents, man and team.....	.306
Stacking one acre, 1.256 hrs. at 11.8 cents, extra man.....	.148
Total	\$0.453

From this it appears that when wages is allowed for men only the cost of stacking is 29.6 cents per acre and that, when wages is allowed for men and team, the cost is 45.3 cents per acre.

This brings the labor involved in raising Wheat, Oats, Rye and Barley down to threshing. It is undoubtedly a fact that

now and then one or the other of the operations enumerated are found unnecessary as for instance, when after Potatoes or Corn some other crop is put in without plowing or when shocking or stacking may be dispensed with, but such cases appeared to be too rare to demand attention. The above expenses must therefore be figured on in growing the crops in question.

The next step will be to bring Corn down to the same point. Besides Plowing and Harrowing or fitting, the labor required in growing corn differs from that in growing the other crops. It was therefore necessary to explain this separately.

HARROWING AND FITTING: As the cost of plowing is practically the same for all crops it need not be explained again. Harrowing, etc., is therefore the first item to receive attention. As for grain, this includes disking, harrowing, etc., both before and after planting, rolling or all the work required to fit the plowed soil for the seed and of dragging after planting. It will be noticed that, on the whole, more labor is expended to prepare the soil for corn than for the other crops included. The average time needed to prepare an acre for seed and for dragging after seeding in this case was 1.95 hours. This makes the cost:

Harrowing, etc., per acre, 1.95 hrs. at 11.8 cents, man.....	\$0.23
Harrowing, etc., per acre, 1.95 hrs. at 24 cents, man and team..	.468

Allowing wages for man only the cost of these operations are thus seen to be 23 cents per acre as against 46.8 cents when wages is allowed for team also. This is about 4 and 8 cents higher than the cost shown for this work for the other crops.

PLANTING CORN: This included the actual work of marking, when practiced, and planting. Both hand and horse planters or checkrowers were used. While the latter predominated enough of the former were used to make it necessary to show the time required in each case. With hand planter 2.49 hours were required per acre, with horse planter 1.21 hours. On this basis the cost in each case was:

Planting one acre, 2.49 hrs. at 11.8 cents, hand planter.....	\$0.296
Planting one acre, 1.21 hrs. at 11.8 cents, man.....	.143
Planting one acre, 1.21 hrs. at 24 cents, man and team.....	.290

When hand planter was used the cost foots up to 29.6 cents per acre. For horse planter and wages for man only the cost is 14.3 cents, with wages for team also the cost is 29 cents.

CULTIVATING: In this item is included all the labor involved from planting until ready for cutting or harvesting. This labor consists almost wholly of cultivating or plowing as it was sometimes called. One man and two horses were used for this. The corn was cultivated from three to five times during the season and the time needed for this work was 5.72 hours per acre. This makes the cost:

Cultivating 1 acre, 5.72 hrs. at 11.8 cents, man.....	\$0.677
Cultivating 1 acre, 5.72 hrs. at 24 cents, man and team.....	1.373

In the first case the cost was 67.7 cents per acre, in the second case \$1.37 per acre.

CUTTING, ETC.: This included cutting and shocking. As those who reported here cut their corn this is a proper charge. In some cases it was cut by hand, in others by a harvester or binder. In the latter case an extra man was required for shocking. The time needed to cut one acre by hand was 7.86 hours as against 1.82 hours with a harvester. The cost is as follows:

Cutting 1 acre by hand, 7.86 hrs. at 11.8 cents.....	\$0.93
Cutting 1 acre, harvester, 1.82 hrs. at 23.6 cents, man.....	.43
Cutting 1 acre, harvester, 1.82 hrs. at 24 cents, man and team..	.440
Cutting 1 acre, harvester, 1.82 hrs. at 11.8 cents, extra man....	.215
Total with wages for man and team and extra man.....	\$0.655

From the above it is seen that the average cost of cutting corn by hand was 93 cents per acre; that the average cost with binder and wages for two men only was 43 cents, and that the cost per acre when binder was used and wages allowed for both man and team and, besides this, for one extra man, was 65.5 cents.

Husking: This includes the cost of husking and cribbing the corn. With a few exceptions this work was done by hand and as it was done from the shocks or stacks, which is much slower work than when husked from the hills or standing, considerable time was required for it. Horses were used only for hauling the cobs to the cribs and this required so little time that it was not taken into account. The time re-

quired for one man to husk and crib one acre in 1897 was 11.32 hours and the money cost as follows:

Husking one acre corn, 11.32 hrs. at 11.8 cents..... \$1.34

This shows that the cost of husking and cribbing one acre of corn was \$1.34. With a yield of 44 bushels to the acre this is equivalent to a small fraction over 3 cents per bushel.

This ends the analysis of the labor required, and the cost of same, in raising corn from the time of plowing until the crop is husked and cribbed. As the cost of labor in raising Wheat, Oats, Rye and Barley, down to threshing has already been presented we are now at a point where it practically only remains to show the labor needed for threshing, shelling and marketing in order to be able to determine the cost of labor in the production of these crops. The cost of seed is presented in Section 3 of the foregoing table.

Machines were, of course, used in threshing and shelling. As comparatively few owned such machines it was necessary to hire them. This was generally done at a fixed price per bushel threshed. To each thresher, from 16 to 20 men are usually employed; of these 4 were paid by the party furnishing the machine, and the balance besides board and feed, were paid by the farmers. The number of bushels threshed daily varied greatly with the kind of grain. The averages as shown in the table are: Wheat 1018 bushels, Oats 1375 bushels, Rye 977 bushels, Barley 1486 bushels. The average number of men paid by the farmers for this output is 13.6 with wages at \$1.18 per day or 11.8 cents per hour. The labor cost per bushel of threshing Wheat is 1.58 cents; Oats .86 cents; Rye 1.65 cents; Barley 1.09 cents. If to this is added the price paid for the use of the machine which is 1.16, .89, 1.16, and 1.12 cents per bushel, respectively, for the crops in question, the following is the total cost per bushel of threshing: Wheat 2.74 cents, Oats 1.75 cents, Rye 2.81 cents, Barley 2.21 cents.

In hiring the machine a bargain was often struck under which the different crops, including all the different kinds of grain raised, was threshed at a fixed price. This led to some confusion in reporting. For instance, many farmers

raising more than one kind of grain reported the total number of bushels and the total price paid, but omitted to give the proportion in which the different kinds of grain were represented in these totals. This necessitated some adjustment on our part and it is possible that, although the greatest care was observed in making these and the totals are correct this resulted in some slight unfairness, either in the daily output or in the cost for the machine, to two or more of the crops. All such adjustments, however, were based upon the average of the complete reports and there is therefore good grounds for saying that any unfairness that may exist must be very slight and figures given show a fair average.

With wages the same as for other labor and the output, help employed and cost per bushel for machine, as shown in the table, the cost per acre for threshing an average yield of each crop is as follows:

Threshing one acre, 17.5 bus. of wheat at 2.74 cents.....	\$0.480
Threshing one acre, 39 bus. of oats at 1.75 cents.....	.680
Threshing one acre, 18 bus. of rye at 2.81 cents.....	.510
Threshing one acre, 30 bus. of barley at 2.21 cents.....	.663

On this basis the cost per acre of threshing is seen to be: Wheat 48 cents, Oats 68 cents, Rye 51 cents and Barley 66 cents. This is intended to include all the expenses involved in threshing except the cost of the fuel consumed by the engine. This item was omitted here because the data obtained in relation to it was very limited and apparently not reliable. The amount of this item, however, is small and fully covered under "Other expenses."

SHELLING: For that portion of the corn crop that is fed in the ear on the farm, shelling is obviously not a proper charge. In the general market, however, only shelled corn is considered and those therefore who sell their corn there, must also assume the cost of shelling it. In such case this was mostly done at the elevator and deducted from the price. Hence it was practically impossible to ascertain the proportion of the labor cost in this operation. The total cost per bushel varied from .5 to 2 cents, the average being about 1.3 cents. With an average yield of 42 bushels this makes the cost per acre 55 cents.

Shelling one acre, 42 bushels at 1.3 cents.....	\$0.55
---	--------

MARKETING: By this is meant the expense of hauling the crop from the farm where grown to the market where sold or to the elevator where it is received for shipping. This is an expense that cannot be avoided unless the products in some form are consumed at home and even in such cases it is more than likely some other expense takes its place. It is affected by the distance of hauling, the condition of the roads, etc. The average distance was 6.3 miles. A little over two or 2.02 loads were considered a day's work, and 43, 44, 76, 46 and 47 bushels of Wheat, Corn, Oats, Rye and Barley, respectively, constituted a load. On this basis the cost per bushel of each crop when wages is allowed for man only is, for Wheat, 1.37 cents, Corn 1.34 cents, Oats .77 cents, Rye 1.28 cents, Barley 1.26 cents. With wages for both man and team the cost is 2.80, 2.73, 1.58, 2.60, 2.55 cents per bushel in each case. This makes the cost per acre:

Wheat marketing per acre, 17.5 bus. at 1.37 cents, man.....	\$0.24
Wheat marketing per acre, 17.5 bus. at 2.80 cents, man and team	.49
Corn marketing per acre, 42 bus. at 1.34 cents, man.....	.56
Corn marketing per acre, 42 bus. at 2.73 cents, man and team..	1.14
Oats marketing per acre, 39 bus. at .77 cents, man.....	.30
Oats marketing per acre, 39 bus. at 1.58 cents, man and team..	.62
Rye marketing per acre, 18 bus. at 1.28 cents, man.....	.23
Rye marketing per acre, 18 bus. at 2.60 cents, man and team....	.47
Barley marketing per acre, 30 bus. at 1.26 cents, man.....	.38
Barley marketing per acre, 30 bus. at 2.55 cents, man and team..	.77

SEED: In most crops this was one of the biggest items in the cost. The quantity used per acre for each crop varied but little in each case, but the price per bushel reported differed considerably. In many reports the value per bushel for seed was placed from 5 to 25 cents per bushel higher than the price of the same grain for commercial purposes. According to the table the quantity used and the price per bushel of same is as follows: Wheat 1.7 at 72 cents per bushel, Corn .2 bushel at 40 cents per bushel, Oats 2.5 bushel at 35 cents a bushel, Rye 1.6 bushel at 50 cents per bushel, Barley 2.1 bushels at 45 cents per bushel; making the cost per acre of each crop:

Wheat, seed per acre, 1.7 bus. at 72 cents.....	\$1.150
Corn, seed per acre, .2 bus. at 40 cents.....	.080
Oats, seed per acre, 2.5 bus. at 35 cents.....	.880
Rye, seed per acre, 1.6 bus. at 50 cents.....	.800
Barley, seed per acre, 2.1 bus. at 45 cents.....	.950

In Section 4 is presented the number of acres under cultivation, the number not under cultivation and the total number of acres held by the 510 farmers reporting; also the average value in each case.

In the area under cultivation is included all the land under the plow, or which had been cleared up and put in shape for tilling. In the area not under cultivation is included all unbroken land or land which cannot be tilled without previous preparations or properly be classed as cultivated land. The area in the former case is 47,316 acres or an average to each farm of 92.78 acres, valued at \$53.58 per acre. In the latter case the area was 33,750 acres or an average of 66.17 acres to the farm, valued at \$30.58 per acre. This makes a grand total of 81,666 acres or an average of 158.95 acres to the farm with an average value of \$44 per acre.

Efforts were made to obtain data that would enable us to present separately the value of the land and that of the permanent improvements thereon. These, however, did not bring the desired results. While the inquiries were broad enough to cover all the points, and also grouped for the purpose, the farmers, except in a few cases, only reported the total value of both land and improvements—exclusive of buildings—and then the total value of buildings. To distinguish such improvements as clearing, draining, fences, etc., from the land itself is very difficult. For all practical purposes they are generally regarded as a part of the land. Hence there is little or no occasion for keeping the amount invested in such improvements separate from the amount invested in land only.

As to the points covered, however, the answers were complete. These questions were also much easier to answer. Each neighborhood has a fairly well established value on its land. Besides this, its value may be, and often was considered to correspond to the amount given when the sum of its rents is capitalized at the current rate of interest. The value of buildings is also easily determined even when no account is kept of their cost. Especially is this true as compared in this respect, with most other improvements. Considering

these facts, the reason why the farmers failed to report the value of the improvements referred to is easily seen.

As was said the value of buildings was reported separately from the value of land including such other improvements as could not be distinguished from it. Buildings, however, are necessary to farming and generally go with the land. Properly speaking they constitute a part of the capital invested in the business. Their value was therefore added to the land. This was done on such a basis that each acre shared equally, regardless of whether under cultivation or not. The value per acre given above includes, therefore, besides that of land the value of all improvements made upon it.

From this method of treating values it might be inferred that the difference in value between cultivated and uncultivated land, as shown, would indicate the value of improvements. This, however, is seldom the case. The elements which make up the value on both sides differ greatly, particularly in degree. For instance, the land varies as to productive power, improvements required and many other respects. Again land classed as uncultivated was often fenced, drained and partially or wholly cleared. It is plain that in either one of these cases its value was affected and that no inferences along this line can be safely made. The thoroughness of the inquiries, however, prevented much confusion and errors in the answers. Indirectly therefore the method adopted was the means of enabling us to present much more reliable data than would otherwise have been the case.

RENT OR INTEREST ON LAND: This is by far the largest single item of expense. In about 98 per cent. of the reports rent was placed at about 6 per cent. on the average value of the land. The other 2 per cent. allowed a fixed proportion of crop for rent. In either case, however, it was found to amount to about the same. The cost of the use of land is therefore based upon 6 per cent. on its value. As this value consists of the improvements upon it as well as of the land the amount paid for its use is composed of both Rent and Interest. Hence this item is called "Interest on land" in this

investigation. If the average value is used as the basis the cost per acre is as follows:

Interest on one acre of land, \$44.00 at 6 per cent..... \$2.64

In Section 5 is shown the total value of machinery and tools used as well as the average value of same to each acre under cultivation; the total value of work horses used and the average value of same to each acre in the farm.

The total value of the machinery used is seen to be \$203,-234. This is equivalent to \$4.29 to each acre under cultivation or an average of \$398.45 to each of the farms included. The total value of the horses is \$110,999, or an average to each acre in the farm of \$1.25 and to each farm of \$217.65.

MACHINERY AND TOOLS: The schedules called for the value of the machinery, etc., required or used for farming purposes. By value in this case was meant the amount for which, at present prices, their machinery could be replaced with new. While all those included here reported, the figures given were not always those asked for. Many were unable to give the market prices at that time and therefore gave the prices paid when bought. Others again, gave the purchase price without any other explanation, evidently believing that this was the proper amount on which to compute expenses. The number thus giving the prices at which they bought their machinery, etc., footed up to over 50 per cent. of the whole. As prices of farm implements are gradually going down and were undoubtedly therefore lower in many cases at the time of reporting than when bought, it is also likely that the value shown in the tables is somewhat above the actual market price prevailing when the reports were made. While no reliable data bearing upon this difference could be obtained it appeared, after taking everything into account, that it was not big enough to cut much of a figure in the cost of raising the crops.

The expenses arising from the use of machinery, etc., consist of depreciation and interest. By depreciation is meant the wear and tear or gradual using up of the machinery used in production. The amount of this depreciation was variously estimated. In some cases it was placed as high as 12 per

cent. on the value, in others again as low as 8 per cent. Perhaps 10 per cent. is a fair figure. This, at least, is the rate adopted in this investigation.

By interest in this case is meant the proper return to the amount invested in machinery, etc. The amount of this return usually corresponds to the amount paid for borrowed capital or money. As the current rate of interest was 6 per cent. this rate on its value was allowed for interest on machinery, etc.

With the value of the machinery and tools used, the area under cultivation and the respective rates of depreciation and interest given, the cost per acre in each case is easily computed.

Depreciation of machinery, etc., \$4.29 per acre at 10 per cent...	\$0.429
Interest on machinery, etc., \$4.29 per acre at 6 per cent.....	.257
Total per acre	<u>\$0.686</u>

From these figures we thus see that the expense of depreciation and interest to each acre under cultivation was 42.9 and 25.7 cents, respectively. It should be noticed here that under this method of treating these expenses they must be shared alike by all the crops included. As some crops undoubtedly require the use of more machinery in production than others, this may at first sight appear unfair. Upon closer consideration, however, it will be seen that to apportion this cost upon the basis of the machinery used for each crop is practically impossible. It will also be seen any apparent inequality in this respect would in the long run be wiped out by the rotation of crops and other causes.

HORSES: At our present stage of industrial development horses are indispensable to production on the farm. The expenses which arise from their use have been figured both as wages and as depreciation, interest and maintenance on the capital invested in them. Which of these two methods is correct would seem to depend upon the circumstances in each case. When team work is actually hired for wages the amount thus paid, if feed is included, undoubtedly constitutes the expense of this work, but in the case of farmers who keep just enough horses for the running of their farm and who neither hire nor let such work for wages it would seem that

the latter method applies. As the wages paid for team work has been explained already it only remains to point out the expense under the latter method.

Horses wear out and are subject to accidents of one kind or another. The expenses which result from this source are legitimate charges in the cost of production. Horses also cost money, that is, they cannot be obtained without a considerable outlay of capital or money. On the amount thus invested in them interest must be paid and this adds another item to the expense. Finally horses must be maintained, or fed and cared for. This is also combined with outlays that should be taken into account in arriving at the total cost.

DEPRECIATION OF HORSES: By this is meant an amount that corresponds closely to the wear and tear of machinery. Most of those who answered the questions relating to the amount that ought to be set aside annually for depreciation of horses placed it at from 8 to 12 per cent. on their value. The average was about 9 per cent. But as ordinary risks were not figured in this, the rate was placed at 10 per cent., with value as above this makes the cost per acre 12.5 cents.

Depreciation of horses, \$1.25 per acre at 10 per cent..... \$0.125

INTEREST ON VALUE OF HORSES: No inquiries regarding the rate of interest on capital invested in horses were made. But as it was thought likely that it would not differ greatly from the rate paid for other capital the current rate or 6 per cent. was adopted. With the value as shown this makes the cost per acre 7.5 cents.

Interest on value of horses, \$1.25 per acre at 6 per cent..... \$0.075

MAINTENANCE OF HORSES: This includes feed and care. The answers regarding this, while not as complete nor as full as would have been desirable, indicated that the average daily rations of a horse, including both the time at work and the time not working, was equivalent to 10 pounds of oats and 12 pounds of hay. At the average price of these products on the farm during the past 6 years, this would amount to \$36.00 a year to each horse. As there were 1945 horses used the total cost was \$70,240. With 81,066 acres included this would make the cost per acre \$.8674.

Maintenance of horses, \$70,240—81066 acres. Av. per acre..... \$0.867

We see from this that the cost per acre of depreciation, interest and maintenance of horses was 12.5, 7.5, and 86.7 cents respectively or a total of \$1.17 per acre. It should be noticed that the cost of maintenance is based upon the average price of oats and hay during the past six years and is therefore higher than would have been the case had it been based upon the prices paid for these products on the farm in 1896. It should also be noticed that in these calculations the total number of acres in the farms were included, regardless of whether under cultivation or not. This makes the actual cost per acre much lower than if the land under cultivation only had been included, but was thought fair because uncultivated land usually requires more or less team work as well as contributes to the maintenance of horses. Had the cost of horses under this method been charged to the area under cultivation only, the cost per acre would have been as follows: Depreciation 23.5 cents; interest 14 cents; maintenance \$1.48 or a total per acre of \$1.86.

While it is believed that the cost of maintenance as shown above is not far from correct, those who wish to do so may easily substitute the figures given by calculations of their own. It was for this purpose mainly that the actual time required for the team work involved was figured out and presented in notes under each of the tables showing the "Cost of Production."

TAXES: The farmers were asked to report all outlays for taxes or for assessments made on all the property used in production only. The amount given here therefore does not include taxes on bonds and stocks, mortgages or other securities. The total taxes paid was \$20,750. As the area included constitutes 81,066 acres this is equivalent to 25.6 cents per acre or:

Taxes per acre	\$0.256
----------------------	---------

FERTILIZING: According to the reports included here the fertility of the soil was kept up by barnyard and stable manures and by rotation with clover and other leguminous crops. The cost of keeping up the soil by these means was difficult to determine. Particularly because the farmers

themselves in many cases did not seem to have any well defined views regarding it.

Manures were mostly so applied to the land that the whole area under cultivation requiring fertilizing was covered once during a period of 4 or 5 years. The labor involved in this consisted mostly of preparing, caring, hauling and spreading upon the field. The amount required for hauling and spreading was comparatively easy to ascertain, and varied in cost from 12 to 30 cents per load, depending mostly upon the distance of hauling. As to the other processes, however, the data obtained was rather limited. But enough was received to warrant the conclusion that the labor cost per load did not on the average exceed 30 cents.

While each piece of land was manured only once every 4 or 5 years the cost of this should be borne in just proportion by all the crops grown during this period. To effect this, as near as could be done with the means at hand, the average number of loads to each year or crop was ascertained. As the table shows, this average consisted of 2.3 loads. At 30 cents per load, the yearly cost for the labor of manuring was thus 69 cents.

While 30 cents per load may represent the actual cost of the manures to the farmers they are undoubtedly worth more than this to him. This appears from the fact that farmers living in the neighborhood of towns, often buy manures there and besides the labor of hauling pay from 50 to 75 cents per load for same.

Clovers seemed to be used even oftener than manures. As has been said the value of clovers as fertilizers comes from the fact that they absorb nitrogen from the air and store it up in both tops and roots. Even the amount thus stored in the roots alone is sufficient for a crop of grain. As the tops cut off for fodder or hay are worth about as much as a crop of grain the farmers figured that the fertilizing obtained in this manner costs them nothing. When tops, usually the second growth, are plowed under, this mode of fertilizing is of course combined with an expense closely corresponding to the value for feed of materials plowed down.

The average price per load of manure, when purchased,

was 65 cents. This figure was used as a basis for the cost of fertilizing in the foregoing tables in all cases where the cost of this item exceeds \$1.25 per acre.

INTEREST ON THE ANNUAL INVESTMENT: By the annual investment in this case is meant the operating expenses on the farm. It includes all the expenses involved in growing and marketing the crops except rent on land and interest on permanent improvements, machinery and horses. Farmers as well as manufacturers must pay wages, buy materials and meet other outlays incident to production. The money with which this is done is a part of their necessary capital and upon this interest at current rates must be paid. As the farmer turns this capital over only once during the year the sum on which interest should be figured consists of their total outlay for such purposes. In the foregoing tables the annual investment was clearly distinguished from the other investments and its amount is therefore seen in each case.

OTHER EXPENSES: Besides the expenses enumerated and explained above there are other outlays which, directly or indirectly, must be provided for. Among these are binding twine, fuel for the engine when threshing, delays in the progress of the work caused by bad weather, accidents, etc. While the data obtained regarding these expenses was not fully reliable it indicated that, on the average, they would be amply covered by 50 cents per acre. This amount was therefore allowed and is included under "Other expenses."

With this the analysis of the "Cost of Production" as computed from the data in the preceding tables is concluded. The sole aim throughout the whole investigation was to get at the actual cost to the farmers. With this end in view only the best returns, such as bore signs of careful preparation and of being complete and correct were included. Before used they were also carefully examined and edited and precautions were taken against errors in the compilation. In view of this it is felt that conclusions shown can be depended upon and that they represent a true average for the state.

Attention should, perhaps, be called to the fact that no charge has been made for the cost of keeping up fences and buildings, nor for insurance against fire, accidents, etc. As

the amount invested in both fences and buildings was included in the value given for land interest upon it has been charged. This, however, does not fully cover the expense of these items. Fences and buildings must be kept in repair. The cost of doing so should undoubtedly be charged to the "Cost of Production" on the land to which they belong. Most farmers also carry insurance against fire, etc., and this adds another item of expense. While no figures were asked regarding these expenses, several farmers included them in their report. From the facts thus submitted it appeared that the total expense from these sources cannot be much below 25 cents per acre. It is also possible that besides depreciation and interest on machinery as charged here, there ought to be an additional allowance for repairs such as are caused by accident, etc. Expenses of this kind, however, are easily estimated and those who feel they should be included can readily do so by adding what they consider a fair sum to the cost shown in the tables.

There is also another item which, while it constitutes a part of the true "Cost of Production" and has been so treated in the analysis tables of the different crops, has been left out of the above analysis; namely, that part of the "necessary profit" which economists usually term "Wages of Superintendence." In this analysis, as it stands, the farmers have received wages for such labor as they may perform and interest on the capital employed, but no allowance has been made as a compensation for their efforts and trouble in managing their farms. To such remuneration they are certainly entitled. Without it, in the long run, they neither would nor could stay in the business. In farming, as in other business, there are ups and downs. There are years of depressions during which they are barely able to meet actual outlays. Then again, there are years of good yields or high prices, perhaps both, leaving a surplus above expenses sufficient to offset the losses in poor years. The amount thus obtained necessary to cover "Wages of Superintendence" varies more from year to year, than any other item of expense. As a rule it is figured on the capital used. Experience and investigations in other lines of business show, that in average undertakings it cor-

responds to, or rather equals, the amount allowed for interest. As farming comes within the class of business referred to, the expense of superintendence or management can, in this investigation, be safely placed at 6 per cent. on the capital employed.

Having presented in detail the cost to the farmers of raising the crops in question, it remains to make a few explanations of the figures relating to the value of these crops.

Section 7 shows the yield per acre and price per bushel, as well as the average in each case for 6 years; also the value per acre of the accompanying straw and stalks. These figures were obtained in connection with those relating to the cost and cover the same area and may therefore be used in ascertaining the relation between the Cost of Production and Selling Price.

The products or crops thus consist of the grain and the accompanying straw or stalk. Regarding the data from which the value was computed it can be said that it bore every indication of being accurate or reliable, especially is this true of the data for 1896. The first schedule was sent out early in 1897. As the farmers mostly keep their accounts in their heads, it is, therefore, likely that the facts concerning their last crops should be more fresh in their minds than those of several years back. Indeed, this was fully explained in many cases. While the data for 6 years may not, for this reason be absolute, it is unquestionably so nearly so, that it can be safely used for the purpose for which it was intended.

The yield and price of each crop, both for 1896 and the average for 6 years, are so plainly shown in the table that no further explanations in this respect are needed. Computed, the data for 1896 gives the following as to the value per acre of the grain:

Wheat, 18 bushels per acre at 65 cents.....	\$11.70
Oats, 41 bushels per acre at 17 cents.....	6.97
Rye, 20 bushels per acre at 33 cents.....	6.60
Barley, 32 bushels per acre at 28 cents.....	8.96
Corn, 44 bushels per acre at 24 cents.....	10.56

We see from this that in 1896 Wheat was worth \$11.70, Oats \$6.97, Rye \$6.60, Barley \$8.96, and Corn \$10.56 per acre. Of the grain alone Wheat thus gave the greatest returns.

Corn comes next, and Rye, although the yield reported of it is considerably above the average, gave the lowest return.

The verage yield and price of grain as reported for six years gives the following as the value per acre of each crop:

Wheat, 17.5 bushels per acre at 61 cents.....	\$10.68
Oats, 39 bushels per acre at 26 cents.....	10.14
Rye, 18 bushels per acre at 45 cents.....	8.10
Barley, 30 bushels per acre at 43 cents.....	12.90
Corn, 42 bushels per acre at 34 cents.....	14.28

These figures show the average value per acre of each crop for a period of six years. Comparing this with the value in 1896, a marked difference is noticed. Corn now ranks first, while Wheat is the third in order. Except in the case of Wheat, the average value for the period given is also considerably higher than that of 1896. This is mostly due to fluctuation in prices.

In the values thus shown Straw and Stalks were not included. The figures given, therefore, do not in any case represent the total value per acre of all the products. Straw and Stalks, while by-products only, are, if fully utilized, of considerable value to the farmers. While mostly used for feed and bedding or for fertilizers, these products often command a fair price in the market. The value placed upon them, however, varied greatly. Some based their estimates upon the commercial value of the feed and fertilizing elements in Straw and Stalks, as presented in official reports, without making any allowance for the form in which they are found. Others again were governed by what they considered the value of these products when used in their natural state upon the farm. The first of these estimates was used in the first presentation of the 40 and 400 acre lots, but the value given is considered too high. Ordinarily, the good the farmers get out of Straw, etc., is worth much less than this. The second method, or the farmers' own estimate, is undoubtedly the most nearly correct and this has therefore been used in the analysis tables. The average value per acre of straw and stalks in this latter case is as follows:

Wheat, straw per acre.....	\$1.30
Oats, straw per acre.....	2.30
Rye, straw per acre.....	2.20
Barley, straw per acre.....	1.50
Corn, straw per acre.....	3.00

According to the estimates of the farmers themselves Wheatstraw is worth \$1.30, Oat-straw \$2.30, Rye-straw \$2.20, Barley-straw \$1.50, and Corn-stalks \$3.00 per acre. In order to obtain the total value of the products per acre the value of the straw as thus shown should be added to the value of the grain as presented above. On this basis the total value per acre of both grain and straw, etc., in 1896 was as follows:

Wheat, grain and straw per acre.....	\$13.00
Oats, grain and straw per acre.....	9.27
Rye, grain and straw per acre.....	8.80
Barley, grain and straw per acre.....	10.46
Corn, grain and stalk per acre.....	13.56

With the value of straw, etc., the same as in 1896, the average value per acre of each of the crops included of both the grain and straw for 6 years is:

Wheat, grain and straw per acre.....	\$11.98
Oats, grain and straw per acre.....	12.44
Rye, grain and straw per acre.....	10.30
Barley, grain and straw per acre.....	14.40
Corn, grain and stalk per acre.....	17.28

This table shows that the average value per acre of both grain and straw, etc., of each of the six crops was as follows: Wheat \$11.98, Oats \$12.44, Rye \$10.30, Barley \$14.40 and Corn \$17.28. In this case corn was worth the most and rye the least. As straw and stalks were placed at the same value in both cases the relative value of the crops of 1896 and the average crop was not affected by the same when added to the value of the grain.

The prices per bushel given above, or used in computing the value per acre, are those actually received by the farmers for their grain when delivered at mill or elevator.

The apparently high value shown of straw, etc., is partly accounted for by the fact that a large proportion of the returns included were from farmers living in the southern or eastern parts of the state where these products are in greater demand and therefore command a higher price.

Regarding the factors which enter into the Cost of Production the following explanations may be added: While the rate of wages used is the rate paid in 1896, it was found to correspond closely to the average rate during the six year per-

iod. During a few years previous to 1896 there had been a gradual fall in wages. In 1896, however, there was an upward tendency. The effect of this was to largely counteract the former fall. Hence the small difference between the wages of that year and the average wage.

The time required for performing the various parts of the labor involved is, in some cases, that of 1896, and in others the average for a series of years as observed by the farmers. Between the two, however, there was little or no difference in the time reported. This probably indicates that during the last few years there have been few, if any, improvements in either the machinery used or in other methods of production. The reports frequently referred to a new style of corn-harvester which had proved a success, but this had not come into general use.

The value reported of land and horses was that of 1896. As this was in the midst of a severe agricultural depression, and as the prices of horses have been gradually doing down, it is likely that the value given was somewhat lower than the average value of same for the period covered, although the difference is likely to be very small. As to machinery and tools the value reported will correspond closely to the average value. Regarding the rate of depreciation and interest there are also good reasons for believing they have undergone no radical change during the last few years.

Of seed and the grain used for feed or maintenance of horses, the prices upon which the cost of same are based are those of the average for the period covered. As the average prices of all the crops, except wheat, is higher than the price of 1896, the cost of these items for these crops as shown, is higher than would have been the case had the prices of that year been made the basis. The difference, however, is not great.

In arriving at the cost per acre of threshing, shelling and marketing, the average yield instead of the yield of 1896 was used. As a result of this the cost per acre of these items, particularly of threshing and shelling, is a few cents lower than would have been the case had the cost been based on the yield of 1896. As the cost per bushel, as shown above, will practi-

cally apply in either case, the cost for 1896 may be ascertained by substituting the yield of that year for the yield given.

TAXES: The amount paid per bushel for threshing, machine and shelling, also the items included under "Other expenses," are those for 1896. Nothing developed, however, to indicate that the expenses covered by these items vary so much from year to year as to materially affect the cost per acre. In common with the other expenses mentioned these may, therefore, be used in the average cost, as well as for the cost of 1896.

In figuring out the cost per bushel from the cost per acre, as explained and as presented in the following tables, the average yield was also used in each case. The result of this was a slightly higher cost per bushel than if based on the larger yield. As in the case just mentioned, practically, the exact cost for 1896 may be obtained by substituting the yield of that year. It will be noticed, however, that the difference in the two instances is almost too small to deserve notice.

While the data thus collected and used relate directly to the conditions in 1896 only, there are good reasons for believing that it applies equally as much to the other years, and that cost computed from it represents a fair average for the period covered. In fact many farmers stated that the cost per acre has remained at about the same point for several years. Of course there are necessarily some variations even outside of those explained here. Under normal conditions, however, they will not greatly affect the results as a whole.

In order to present the average "Cost of Production," as explained above, in a more convenient form, and to show its relation to the value or selling price of the products, the following tables are included:

WHEAT.—Cost of production per acre and bushel.

Items.	Cost with wages for labor only.		Cost with wages for both labor and team.	
	Per acre.	Bush.	Per acre.	Bush.
Plowing	\$.535	Cts. 3.05	\$ 1.087	Cts. 6.21
Harrowing, etc. . . . .	.192	1.10	.391	2.24
Seeding .....	.106	.61	.216	1.23
Cutting .....	.117	.67	.237	1.35
Shocking .....	.140	.80	.140	.80
Stacking .....	.296	1.69	.453	2.59
Threshing .....	.480	2.74	.480	2.74
Marketing .....	.240	1.37	.490	2.80
Seed	1.150	6.57	1.150	6.57
Taxes .....	.256	1.46	.256	1.46
Maintenance of horses .....	.867	4.96	.....	.....
Fertilizing, 2,3 loads manure.....	.690	3.94	.690	3.94
Other expenses .....	.500	2.86	.500	2.86
Depreciation on value machinery.....	.429	2.45	.429	2.45
Depreciation on value horses.....	.125	.71	.....	.....
Total annual investment	6.123	34.98	6.519	37.24
Interest on value of mach.....\$4.29 at 6 per cent.	.257	1.47	.257	1.47
Interest on value of horses..... 1.25 at 6 per cent.	.075	.43	.....	.....
Interest on annual invest....\$6.12 at 6 per cent. \$6.52	.355	2.03	.379	2.17
Interest on value of land.....\$44.00 at 6 per cent.	2.640	15.09	2.640	15.09
Total cost	9.450	54.00	9.795	55.97

Investment per acre, \$55.66. Yield per acre, 17.5 bushels.

From the first presentation in the above table, which is regarded as the most complete, we see that the annual investment with interest on the same and on the value of the machinery and horses used and of the rent of the land in raising wheat, foot up to \$9.45 per acre. It has also been seen that the value per acre of the crops produced was \$11.70 in 1896, and \$10.68 on the average for the grain, and \$1.30 per acre in each case for the straw.

The cost and value may thus be compared. Before this is done, however, the value of straw should either be deducted from the cost or added to the value of the grain. If deducted from the cost the same is reduced from \$9.45 to \$8.15 per acre.

Thus with "Cost of Production," at \$8.15, and the "Value of Products" at \$11.70 and \$10.68, there was a surplus of value of \$3.55 in 1896, and \$2.53 on the average. As the capital invested or used for \$55.66, these surpluses are equivalent to 6.39 and 4.55 per cent. on the same, respectively. In 1896 the surplus more than covers necessary profit, but on the aver-

age it falls below this requirement by about one and one-half per cent.

Another comparison may be of interest. The table shows the annual investment to be \$6.12, and that interest on the same and on the value of machinery and horses amounted in all to 69 cents. As necessary profit is a part of the expenses and in the long run is found to equal in amount the sum paid in interest, another item of 69 cents should be included. This makes the total expense, less those arising from the use of land, \$7.50 per acre. With the value of the crops, including straw, at \$13.00 in 1896, and \$11.98 on the average, there is a respective surplus of \$5.50 and \$4.48. As all expenses, except those of land, have been covered, these surpluses may be applied as rent on land and as necessary profit on the value of same. If shared alike by these two factors, as in this case it should be, the sum to each was \$2.75 in 1896, and \$2.24 on the average.

We see from this that if land is credited with the surplus the amount left for rent after meeting all expenses, including profits high enough for the farmer to remain in the business, was \$2.75 on the crop of 1896, and an average of \$2.24 on each of the six crops. Capitalized at 6 per cent. this surplus indicates that the value per acre of land for raising wheat was \$45.83 in the first and \$37.33 in the second case.

OATS.—*Cost of production per acre and bushel.*

Items.	Cost with wages for labor only.		Cost with wages for both labor and team.	
	Per acre.	Bush.	Per acre.	Bush.
	\$	Cts.	\$	Cts.
Plowing .....	.595	1.37	1.087	2.79
Harrowing, etc., .....	.192	.49	.391	1.00
Seeding .....	.106	.27	.216	.66
Cutting .....	.117	.30	.237	.61
Shocking .....	.140	.36	.140	.36
Stacking .....	.296	.76	.453	1.16
Threshing .....	.680	1.74	.680	1.74
Marketing .....	.300	.77	.620	1.59
Seed .....	.880	2.25	.880	2.25
Taxes .....	.256	.66	.256	.66
Maintenance of horses .....	.887	2.22	.....	.....
Fertilizing 2.3 loads manure.....	.690	1.77	.690	1.77
Other expenses .....	.500	1.28	.500	1.28
Depreciation on value machinery.....	.429	1.10	.429	1.10
Depreciation on value horses.....	.125	.33	.....	.....
Total annual investment.....	6.113	15.67	6.579	16.88
Interest on value of machinery...\$4.29 at 6 per cent.	.257	.66	2.57	.66
Interest on value of horses.....1.25 at 6 per cent.	.075	.19	.....	.....
Interest on annual invest.....6.11 at 6 per cent. \$6.58	.355	.91	.383	.98
Interest on value of land.....44.00 at 6 per cent.	2.640	6.77	2.640	6.77
Total cost	\$9.440	24.20	\$9.859	25.23

Total investment, \$55.65. Yield per acre, 39 bushels.

From the first presentation in the above table, which is regarded as the most complete, we see that the annual investment, including interest on the same and on the value of machinery and horses used and of the rent of land in raising oats, was \$9.44. It has also been seen that the value per acre of the crops produced was \$6.97 in 1896, and \$10.14 on the average for the grain and \$2.30 in each case for the straw.

Before cost and value is compared, the value of straw should be either deducted from the above cost or added to the value. If deducted from the cost the same is reduced from \$9.44 to \$7.14 per acre.

Thus, with "Cost of Production" at \$7.14 and the "Value of Products" at \$6.97 for the crop of 1896, and \$10.14 for the average crop there is a loss of 17 cents in the first case and a profit of \$3.00 in the second. As the capital invested or used amounted to \$55.65, the loss in the first is .30 per cent., while in the second the profit is equivalent to 5.39 per cent. on the capital invested.

Another comparison may be of interest. The table places the annual investment at \$6.11, and the sum of the interest on

same and on the value of machinery and horses used, at 69 cents. If necessary profit, which in the long run is found to be equal to the amount of the interest, is also included, another item of 69 cents should be added. This brings the cost per acre, less those expenses which arise from the use of land, up to \$7.49 with the value of the crops, straw included, at \$9.27 in 1896, and \$12.44 on the average. There is a surplus in this case of \$1.78 and \$4.95, respectively. As all expenses, except those of land, have been covered, these surpluses may be applied as rent on same and as necessary profits on its value. If shared alike by these two factors, as in this case it should be, the share to each was \$.89 in 1896, and an average of \$2.48.

We see from this that if land is credited with the surplus the amount left for rent, after meeting all expenses, including necessary profits high enough for the farmers to remain in the business, was \$.89 in 1896, and an average of \$2.48. This indicates that at a capitalization of 6 per cent. of these surpluses, the land was worth for raising oats only \$14.83 per acre in the first case, while on the average it was worth \$41.33 for this purpose.

RYE.—Cost of production per acre and bushel.

Items.	Cost with wages for labor only.		Cost with wages for both labor and team.	
	Per acre.	Bush.	Per acre.	Bush.
	\$	Cts.	\$	Cts.
Plowing .....	.535	2.97	1.087	6.04
Harrowing, etc. ....	.192	1.07	.391	2.17
Seeding .....	.106	.59	.216	1.20
Cutting .....	.117	.65	.237	1.32
Shocking .....	.140	.78	.140	.78
Stacking .....	.296	1.65	.453	2.52
Threshing .....	.510	2.83	.510	2.83
Marketing .....	.230	1.28	.470	2.61
Seed .....	.800	4.44	.800	4.44
Taxes .....	.256	1.42	.256	1.42
Maintenance of horses .....	.867	4.82	.....	.....
Fertilizing 2.3 loads manure .....	.690	3.83	.690	3.83
Other expenses .....	.500	2.78	.500	2.78
Depreciation on value of machinery .....	.429	2.38	.429	2.38
Depreciation on value of horses .....	.125	.69	.....	.....
Total annual invest.	\$5.793	32.18	\$6.179	34.32
Interest on value of machinery. \$4.29 at 6 per cent. ....	.257	1.43	.257	1.43
Interest on value of horses. \$1.25 at 6 per cent. ....	.075	.42	.....	.....
Interest on annual invest. \$5.79 at 6 per cent. \$6.18 .....	.335	1.86	.359	2.00
Interest on value of land. \$44.00 at 6 per cent.	2.640	14.66	2.640	14.66
Total cost	\$9.100	50.65	\$9.435	52.41

Investment per acre, \$55.29. Yield per acre, 18 bushels.

From the first presentation in the above table, which is regarded as the most complete, we see that the annual investment, with interest on the same and on the value of the machinery and horses used and of the rent of the land in raising rye, foot up to \$9.10 per acre. It has also been seen that the value per acre of the crops produced was \$6.60 in 1896, and \$8.10 on the average for the grain and \$2.20 per acre in each case for the straw.

The cost and value may thus be compared. Before this is done, however, the value of straw should either be deducted from the cost or added to the value of the grain. If deducted from the cost the same is reduced from \$9.10 to \$6.90 per acre.

Thus, with "Cost of Production," at \$6.90, and the "Value of Products," at \$6.60 for the crop in 1896, and \$8.10 for the average crop, there was a loss of \$.30 in the first, and a surplus of \$1.20 in the second case. As the capital invested was \$55.29, the loss on the same in the first is only nominal, while the average profit in the second is 2.20 per cent. The returns from the crop of 1896, therefore, did not fully cover the cost

of producing it, while the average returns of six crops brought, besides other expenses, 2.20 per cent. for the necessary profit.

Another comparison may be of interest. The table shows the annual investment to be \$5.79, and that interest on the same and on the value of machinery and horses amounted in all to 67 cents. As necessary profits is a part of the expenses, and in the long run is found to equal in amount the sum paid in interest, another item of 67 cents should be included. This makes the total expense, less those arising from the use of the land, \$7.13 per acre. With the average value of the crops, including straw, at \$8.80 in 1896, and \$10.30 on the average, there is a respective surplus of \$1.67 and \$3.17. As all expenses, except those of land, have been covered, these surpluses may be applied as rent on land and as necessary profit on the value of same. If shared alike by these two factors, as in this case it should be, the sum to each was \$.84 in 1896, and \$1.58 on the average.

We see from this that if land is credited with the surplus, the amount left for rent after meeting all expenses, including profits high enough for the farmers to remain in the business, was \$.84 on the crop of 1896, and an average of \$1.58 on each of the six crops. Capitalized at 6 per cent. this surplus indicates that the value per acre of land for raising rye was \$14.00 in the first, and \$26.33 in the second case.

BARLEY.—*Cost of production per acre and bushel.*

Items.	Cost with wages for labor only.		Cost with wages for both labor and team.	
	Per acre.	Bush.	Per acre.	Bush.
	\$	Cts.	\$	Cts.
Plowing .....	.535	1.78	1.087	3.62
Harrowing .....	.192	.64	.391	1.30
Seeding .....	.106	.35	.216	.72
Cutting .....	.117	.39	.237	.79
Shocking .....	.140	.46	.140	.46
Stacking .....	.286	.99	.463	1.51
Threshing .....	.663	2.21	.663	2.21
Marketing .....	.380	1.26	.770	2.57
Seed .....	.950	3.17	.950	3.17
Taxes .....	.256	.85	.256	.85
Maintenance of horses .....	.867	2.89	.....	.....
Fertilizing 2.3 loads manure.....	.690	2.30	.690	2.30
Other expenses .....	.500	1.67	.500	1.67
Depreciation on value machinery.....	.429	1.43	.429	1.43
Depreciation on value horses.....	.125	.42	.....	.....
Total annual investment	\$6.246	20.81	\$6.782	22.60
Interest on value of machinery. \$4.29 at 6 per cent.	.257	.86	.257	.86
Interest on value of horses..... \$1.25 at 6 per cent.	.075	.25	.....	.....
Interest on annual invest... \$6.25 at 6 per cent.	.363	1.21	.395	1.32
Interest on value of land..... \$44.00 at 6 per cent.	2.640	8.80	2.640	8.80
Total cost	\$9.581	31.93	\$10.074	33.53

Investment per acre, \$55.79. Yield per acre, 30 bushels.

From the first presentation in the above table, which is regarded as the most complete, we see that the annual investment, with interest on the same and on the value of the machinery and horses used and of the rent of land in raising one acre of barley, foots up to \$9.58.

It has also been seen that the value per acre of the crops produced was \$8.96 in 1896, and \$12.90 on the average for the barley, and \$1.50 in each case for the straw.

The cost and value may thus be compared. Before this is done, however, the value of straw should either be deducted from the cost or added to the value as shown. If deducted from the cost the same is reduced from \$9.58 to \$8.08 per acre.

Thus, with "Cost of Production" at \$8.08, and "Value of Product" at \$8.96 and \$12.90, there was a surplus of value of \$.86 in 1896, and of \$4.82 on the average. As the capital invested or used was \$55.79, these surpluses were equivalent to 1.54 and 8.69 per cent. on the same, respectively.

Another comparison may be of interest. The table shows that the annual investment was \$6.25 and that interest on

same and on the value of machinery and horses used amounted in all to 70 cents. As necessary profit is a part of the expenses, and in the long run equals the interest on all the capital used, another item of 70 cents should be included for this purpose. This makes the total expense, less those arising from the use of land, \$7.65 per acre. With the value of the crop, including straw at \$10.46 for 1896, and the average at \$14.40, there is a respective surplus of \$2.81 and \$6.75. As all expenses, except those of land, have been covered, these surpluses may be applied as interest on land and as necessary profit on the value of same. If shared alike by these two factors, as under this method it should be, the sum to each was \$1.40 in 1896 and \$3.38 on the average.

We see from this that if land is made the residual claimant, the surplus left for rent after meeting all expenses, including profits high enough for the farmers to remain in the business, was \$1.40 in 1896, and an average for each of the six crops of \$3.38. Capitalized at 6 per cent. these sums indicate that the value per acre for raising barley was \$23.33 in the first and \$56.33 in the second case.

CORN.—Cost of production per acre and bushel.

Items.	Cost with wages for labor only.		Cost with wages for both labor and team.	
	Per acre.	Bush.	Per acre.	Bush.
	\$	Cts.	\$	Cts.
Plowing .....	.535	1.28	1.087	2.59
Harrowing, etc. ....	.290	0.55	.468	1.12
Planting .....	.143	0.34	.290	.69
Cultivating .....	.677	1.61	1.373	3.27
Cutting, by hand.....	.930	2.21	.930	2.21
Husking	1.340	3.19	1.340	3.19
Marketing .....	.560	1.33	1.140	2.71
Shelling .....	.550	1.31	.550	1.31
Seed .....	.080	0.19	.080	.19
Taxes .....	.256	0.61	.256	.61
Maintenance of horses .....	.867	2.07	.....	.....
Fertilizing 2.3 loads manure.....	.690	1.64	.690	1.64
Other expenses .....	.500	1.19	.500	1.19
Depreciation on value of machinery.....	.429	1.02	.429	1.02
Depreciation on value of horses.....	.125	0.30	.....	.....
Total annual investment.....	\$7.912	18.84	\$9.133	21.74
Interest on value of mach.....\$4.29 at 6 per cent.	.257	.61	.257	.61
Interest on value of horses.....\$1.25 at 6 per cent.	.075	.18	.....	.....
Interest on annual invest...\$7.91 at 6 per cent. \$9.13.	.475	1.24	.458	1.11
Interest on value of land.....\$44.00 at 6 per cent.	2.640	6.28	2.646	6.28
Total cost	\$11.359	27.15	\$12.494	29.74

Investment per acre, \$57.45. Yield per acre, 42 bushels.

From the first presentation in the above table, which is regarded as the most complete, we see that the annual investment, with interest on the same and on the value of the machinery and horses used and of the rent of the land in raising one acre of corn, foots up to \$11.36.

It has also been seen that the value per acre of the crops produced was \$10.56 in 1896, and \$14.28 on the average for the corn and \$3.00 in each case for the stalks.

The cost and value may thus be compared. Before this is done, however, the value of stalks should either be deducted from the cost or added to the value as shown. If deducted from the cost, the same is reduced from \$11.36 to \$8.36 per acre.

Thus, with "Cost of Production" at \$8.36, and the "Value of Products" at \$10.56 and \$14.28, there was a surplus of value of \$2.20 in 1896 and \$5.92 on the average. As the capital invested or used was \$57.45, these surpluses are equivalent to 3.86 and 10.30 per cent. on same, respectively.

Another comparison may be of interest. The table shows that the annual investment was \$7.91, and that interest on

same and on the value of machinery and horses used, amounted in all to 81 cents. As necessary profit is a part of the expenses and in the long run equals the interest on all the capital used, another item of 81 cents should be included for this purpose. This makes the total expenses, less those arising from the use of the land, \$9.53 per acre. With the value of the crop, including stalks, at \$13.56 for 1896, and the average at \$17.28, there is a respective surplus of \$4.03 and \$7.75. As all expenses, except those of land, have been covered, these surpluses may be applied as rent on land and as necessary profit on the value of same. If shared alike by these two factors, as under this method it should be, the sum to each was \$2.02 in 1896, and \$3.87 on the average.

We see from this that, if land is made the residual claimant, the surplus left for rent after meeting all expenses, including profits high enough for the farmers to remain in the business, was \$2.10 in 1896, and an average for each of the six crops of \$3.96. Capitalized at 6 per cent., these sums indicate that the value per acre for raising corn, was \$33.66 in the first and \$64.50 in the second case.

TABLE LIV.—FACTORS OF COST AND VALUE.

It was stated in the introduction that this investigation is chiefly based upon the data obtained from 1,510 reports. We have also seen that of these reports 510 were made the basis for the foregoing calculations and analysis. These reports were the most complete. Besides this, they cover the best agricultural counties in the southern and eastern parts of the state. On the whole, therefore, they were regarded as the most important and for this reason were treated separately as well as more fully. The remaining 1,000 reports are compiled into the table covering these two pages. These reports cover most of the middle and many of the northern counties in the state; and that many of these offer fewer advantages for farming was plainly apparent from the returns.

Further explanations relating directly to the table are unnecessary. A few

Wages paid per day and month.

Items.	WITH BOARD.		WITHOUT BOARD.		DIFFERENCE.	
	Day.	Month.	Day.	Month.	Day.	Month.
Man and team of two horses	\$2.06	\$43.60	\$2.50	\$57.60	\$0.44	\$13.00
Labor, one man .....	.95	18.20	1.25	27.50	.20	9.30
Team of two horses	1.11	25.40	1.25	30.10	.19	3.70

Time needed for doing certain parts of the work.

Items.	Hours per acre.	Items.	Hours per acre.
Plowing, man and team.....	4.60	Shocking for grain, one man..	.70
Harrowing for corn, man and team	2.00	Stacking for grain, two men	1.30
Harrowing for grain, man and team	1.70	Planting corn, man and team..	1.20
Seeding for grain, man and team	1.00	Planting corn, hand, one man	2.40
Cutting for grain, man and team	1.10	Cultivating corn, man and team	6.60
		Cutting corn, two men and	2.50
		Cutting corn, hand, one man..	8.10
		Cutting, av. tables.....	.....
		Husking, etc., hand, one man..	11.20

Threshing, marketing and seed.

Items.	THRESHING.			MARKETING.			SEED PER ACRE.		
	Bushels per day.	No. of men employed.	Per Bush for machine.	Miles of hauling.	Loads per day.	Bush. per load.	Bushels.	Price.	
								1896.	6 years.
Wheat	900	14	1.10	7	2	45	1.8	65	70
Corn—shelling			1.2	7	2	45	.2	30	38
Oats	1700	14	1.	7	2	75	2.8	25	36
Rye.....	800	14	1.10	7	2	50	1.7	40	48
Barley	1200	14	1.	7	2	50	2.2	35	43

comparisons, however, between the reports already used and as presented in table 53 and those included here may be of interest. In relation to the "Cost of Production" the following may be noticed: The figures in sections 1, 2, 3 and 6 of the two tables indicate that the expense of labor, seed, taxes, maintenance, manures, etc., was about the same in the two cases. The figures in sections 4 and 5 show that those who reported for this table farmed cheaper land and used less machinery and therefore had the lowest outlays for rent, interest and depreciation. In relation to the "Value of the Products," the figures in section 7, showing directly the yield and price, indicate that the receipts per acre of those, whose reports are included in this table were considerably below the receipts shown in the other table.

As a whole, this table shows a lower cost as well as a lower value of the products.

Acres in farms, value per acre.

Items.	Acres under cultivation.	Acres not under cultivation.	Total acres, average prices.
Acres in farms; farmers reporting.....	91800	72250	164050
Value per acre, average value.....	\$45.30	\$15.50	\$32.00

Value of machinery and horses used.

Items.	Value per acre.	Total value
Machinery: Per acre under cultivation; total value.....	\$3.48	\$319464.00
Horses: Per acre in farms; total value.....	1.23	200932.00

Other items and factors of expense.

Items.	Per acre.	Total.
Taxes: Per acre in farm; total paid.....	\$.26	\$42653.00
Maintenance of horses: Per acre in farm; total cost.....	.70	114600.00
Manures: Loads per acre; total loads.....	2.00	192790.00
Manures: Price per load bought \$.50; labor cost per load.....		\$.32
Horses: Number used, 3,820; average value.....		\$52.60

Yield per acre, price per bushel, value per acre of straw.

Items.	YIELD. PRICE. 1896.		YIELD. PRICE. 6 years.		Value of straw reported by farmers.
	Bush.	Cents.	Bush.	Cents.	
Wheat	16	60	15	63	\$1.20
Corn	37	22	35	50	2.50
Oats	35	17	34	24	2.00
Rye	15	33	14	42	1.40
Barley	28	27	26	38	1.20

TABLE LV.—"COST OF PRODUCTION" OF ONE ACRE OF WHEAT AS COMPUTED FROM THE DATA RELATING TO IT IN THE FOREGOING TABLE, OR TABLE 54.

Items of expense.	Cost acre.	Cost Bush.
Plowing	4.6 hours at 12.5 cents	\$0.575
Harrowing, etc	1.17 hours at 12.5 cents	.212
Seeding	1 hour at 12.5 cents	.125
Cutting	1.1 hours at 12.5 cents	.138
Shocking .....	.7 hours at 12.5 cents	.087
Stacking, labor	2.6 hours at 12.5 cents	.325
Threshing, machine	16 bushels at 1.1 cents	.176
Threshing, labor	2.5 hours at 12.5 cents	.312
Marketing	1.8 hours at 12.5 cents	.225
Seed	1.8 bushels at 65 cents	1.170
Taxes .....	.1 acre at 26 cents	.260
Maintenance of horses.....	.1 acre at 70 cents	.700
Fertilizing	2 loads at 32 cents	.640
Other expenses .....	.1 acre at 50 cents	.500
Depreciation of machinery.....	3.48 dollars at 10 per cent.	.348
Depreciation horses	1.23 dollars at 10 per cent.	.123
Total an. investment		\$5.926
Interest on machinery.....	3.48 dollars at 6 per cent.	.208
Interest on horses	1.23 dollars at 6 per cent.	.074
Interest on an. invest.....	5.93 dollars at 6 per cent.	.356
Interest on land	32.20 dollars at 6 per cent.	1.932
Total cost		\$8.496
		\$53.10

Total investment, \$42.84. Hours for man and team, 11.5. Total hours of labor, 16, exclusive of labor on manures.

TABLE LVI.—COST OF PRODUCTION OF ONE ACRE OF CORN AS COMPUTED FROM THE DATA RELATING TO IT IN TABLE NUMBER 54.

Items of expenses.	Cost acre.	Cost Bush.
Plowing	4.6 hours at 12.5 cents	\$.575
Harrowing, etc	2 hours at 12.5 cents	.250
Panting	1.2 hours at 12.5 cents	.150
Cultivating	5.6 hours at 12.5 cents	.700
Cutting	8.1 hours at 12.5 cents	1.012
Husking	11.2 hours at 12.5 cents	1.400
Marketing	4 hours at 12.5 cents	.500
Shelling .....	.37 bushels at 1.2 cents	.440
Seed	1.5 bushel at 30 cents	.060
Taxes .....	.1 acre at 26 cents	.260
Maintenance of horses .....	.1 acre at 70 cents	.700
Fertilizing	2 loads at 32 cents	.640
Other expenses .....	.1 acre at 50 cents	.500
Depreciation of machinery	\$3.48 at 10 per cent.	.348
Depreciation of horses.....	\$.1.23 at 10 per cent.	.123
Total an. investment.....		\$7.658
Interest on value of machinery.....	\$3.48 at 6 per cent.	.208
Interest on value of horses.....	1.23 at 6 per cent.	.074
Interest on annual investment	7.66 at 6 per cent.	.459
Interest on value of land.....	32.20 at 6 per cent.	1.932
Total cost		\$10.331
		\$27.91

Total investment, \$44.57. Hours for man and team, 17.4. Total hours of labor, 36.7, exclusive of labor on manures.

PART II.

FACTORY INSPECTION.

FACTORY INSPECTION.

GENERAL INSPECTION.

The duties included under the term "Factory Inspection" are, in this state, attached to the Bureau of Labor, Census and Industrial Statistics. The law of April 12th, 1883, which created this Bureau made it the duties of its commissioner to inspect all factories and workshops and to see that the laws regarding the protection of employes against accidents, the employment of women and children, etc., are complied with and to enforce the same if necessary by prosecutions before courts.

One of the defects of this law was that it did not provide for special inspectors with duties and powers to enforce it, as it was manifestly impossible for the commissioner, in addition to his other duties, to visit every establishment in the state as often as necessary. Two years later, however, this was in a measure remedied. In 1885 the Bureau was practically reorganized and among other changes provision was made for a special inspector of factories, etc., as one of the officers of the Bureau. At the same time the laws regulating the condition of labor in factories were considerably elaborated and made more stringent. On the whole this law provided for a fairly complete system of factory inspection or factory laws, although, as only one inspector was provided for, the means of their enforcement were left inadequate.

Two years later, or in 1887, the inspection laws were again enlarged. Penalties were attached for their violation. Authority was given to appoint two inspectors instead of one; and their powers to enforce orders and prosecute offenders were increased.

Since this date other acts have been passed. Among these

are the act of 1891 which raised the age at which children may be employed in factories and workshops from thirteen to fourteen years of age; the act of 1895 which relates to fire-escapes; and the act of 1897 which prohibited the sale in this state of goods made or manufactured in state prisons or penal institutions of other states. This last act, however, has been declared unconstitutional. Since 1887 no change has been made in the inspection service.

As no change in the inspection service has been made since 1887 two inspectors only can be exclusively employed in the inspection department. The duties of the inspectors embrace the enforcement of the laws relating to the employment and labor of women and children; the prevention of cruelty to minors; the means of escape from fire in factories, workshops, office buildings, hotels, assembly-halls, schoolhouses, churches, etc.; the inspection of passenger and other elevators; the protection of operatives from dangerous machinery; the sanitary condition of factories and workshops; the communication between engineer and workrooms; the outward swinging of doors in factories, hotels, schoolhouses, churches, etc.; the secure guarding of vats, pans, or other structures containing molten metals or hot liquids, and of well, stair, elevator and other openings.

While this includes most of the direct duties which devolve upon this department, it does not give any adequate idea of the amount of work involved in carrying them out. In fact, only those to whom they are familiar can fully comprehend the amount of work usually required to detect, completely establish, and enforce certain violations. Wisconsin is also a manufacturing state, being in this respect the tenth in order in the union, with her manufacturing establishments so scattered or distributed that there is not a single county which does not need the attention of the inspectors. Taking all these facts into consideration it is not hard to see that we have had our hands full, that it is no exaggeration to say, that there is more work to be done in the way of inspection than two inspectors can properly accomplish.

Of the laws or provisions included in the above summary, some are more easily enforced than others. To provide fire

escapes, or to properly guard dangerous machinery is often combined with greater expenses than the party, upon whom they fall, is willing to meet at the time. In order to avoid this outlay, therefore, many take advantage of technicalities, or resort to other tactics, that not only mean delay in furnishing the improvements needed but cause this Bureau much extra work. Improvements of this nature, however, when once provided have a certain permanency about them. That is, they last for years, or at least require only little attention for some time to come.

On the other hand such violations as those of the child labor laws are much more readily corrected for the time being, but also more frequently repeated. When a child in the employ is found to be under fourteen years of age it is usually quickly discharged. In such cases, however, the abuse is corrected without any expense and hardly any inconvenience to the employer, because children above the legal age, possessing the requisite strength and skill, are usually on hand, ready to step into the vacant place at the same wage. For these reasons, and also because the children themselves, their parents and others conspire in lying as to their age, the child labor law is more often violated than any other of the factory acts. The enforcement of the child labor law, therefore, requires constant attention on the part of the inspectors. In fact more time had to be devoted to this alone than to all the other acts combined.

As our inspection service is inadequate to the amount of work to be done it was necessary, in order to bring about the best possible results, to so apportion our duties that each part of same received, as near as could be made out, its just proportion of our efforts. In order to bring this fairly about, due attention had to be given to the difference in the character of the duties. During the past two years the work of inspection was, therefore, divided into what may here be termed one general, and a number of special inspections. At the general inspection, which was begun early in 1897, attention was given to all the duties embraced in the laws and orders issued, and as far as possible enforced, for all improvements that were found necessary. At the special inspections, which were

made as often as the time allowed, attention was given to child labor and such other violations which are more frequently repeated and therefore need more attention or constant vigilance on the part of the inspectors.

Places or factories, where children are employed, have been visited as often as once a month, and at each visit, every child suspected of being under fourteen years of age was not only carefully examined, but if necessary, also looked up in official, school and church records. At all inspections everything that vigilance and care could do, was done, in order to stop abuses and comply with the law; and if anything to that end has been left undone, it is because of lack of time, or of other means, and not because of carelessness or neglect on the part of the inspectors or any other officer of this Bureau.

The classification of factory inspection as "general" and "special" also made the tabulating of the reports of same much more convenient. As has been said already, the general inspection covered, as nearly as possible, all the provisions in the factory laws; and besides this, many other points, information concerning which is of interest, generally as well as from a statistical point of view. The reports of this inspection are tabulated in table I., and show as near as this could be described in tabulated form, the condition, with reference to the factory laws, of all the establishments inspected. The special inspections covered specific points only, or such as came under the provisions of child labor, and the investigation of the different charges or complaints which from time to time are made to this Bureau. The reports of the special inspection relate mostly to the labor and general condition of children sixteen years of age or under which were employed in factories, etc., throughout the state, and are presented under "Child Labor." The two inspections thus differed in many respects. It was necessary, therefore, to present or treat them separately.

The schedule used at the general inspection is presented on page 213. The inquiries in this schedule disclose the scope of the inspection and will be found interesting.

The schedule on page 213 when properly filled in shows, not only the condition of the plant with reference to the various legislative provisions, but also many other facts regarding it that are interesting from a statistical point of view. Arranged according to subject matter the questions will be found to come under one or the other of the following groups: The name of firm or corporation, place of business, and the kind of goods made or work done; the buildings used or occupied and other facts relating to the plant; hours of labor; number of employes; fire-escapes; stairways; doors; elevators; machinery, vats, etc.; the sanitary condition; improvements made; motive power; value of goods made; amount of wages paid; time in operation; accidents, orders issued, etc. Each of these groups need further explanation.

Name of firms or corporation, place of business, kind of goods made or work done. Of every inspection made these facts were reported. The reasons for this are almost too obvious to mention. Names and location serve as a directory. For this purpose they are useful not only for use in the Bureau but to many of those who receive the reports. They also aid in keeping our records complete. Unless used in some way in connection with the tabulations in this part, the condition of any particular establishment could not be ascertained or looked up. Information as to the kind of goods made or work done is absolutely necessary for a proper classification as to industries.

Attention ought here to be called to the fact that the name, location and business of the different establishments do not appear in Table I. in connection with the facts there presented, but separately and under the head of "Index to Manufacturers". The reason for this was one of convenience or rather lack of space in the table. The same "index" or "running" number, however, has been used in both cases. Anyone, therefore, who may desire the particulars of any given establishment can find them opposite the same number in

Table I. that has been used in the index opposite the name, etc., of the firm in question.

DATE OF ESTABLISHMENT.

By this is meant the year in which the establishment in question was first organized. These facts were collected and presented for two reasons: First, because there are certain provisions, such for instance, as the one which relates to the outward swinging of doors, which cannot be enforced on buildings erected previously to their passage; secondly, because facts relating to the age of a concern are interesting from a business standpoint. There are good reasons for believing that the facts shown under this head are trustworthy in practically every respect.

BUILDINGS, ETC.

The questions in this group relate to the number, height and kinds of buildings occupied, whether the plant is owned or leased by the party or parties operating it at the time, and as to whether it was in operation or idle at the time of inspection. As to buildings, the returns gave a description in detail. In the tables, however, the buildings were divided into two classes. One of these includes all buildings used, of less than three stories in height; while the other includes all buildings three or more stories high. Buildings three or more stories in height are affected by many provisions in the laws to which lower structures are not subjected. This classification will therefore be of assistance to those who may wish to ascertain whether such provisions have been complied with in all cases. Whether the plant was owned or leased, running or idle when inspected, is indicated by "initial" letters in the proper place in the table.

HOURS OF LABOR PER WEEK.

There are two questions in the schedule relating to the hours of labor. One of these is concerned with the full working time; the other with the hours of labor at the time of inspection. While this state has no legislation affecting the

hours of labor, except in the absence of special agreements upon this point, the information here brought out cannot fail to be of interest. Among other things it shows that the ten hour day is not strictly adhered to in all cases. Especially is this true in many lumber and flour mills. Lumber mills are in operation during the season only and during this period they are usually crowded to their full capacity. Many flour mills are in operation both day and night, with only two shifts for every 24 hours. These questions also indicate whether the different establishments were running full or only part time at the time of inspection.

EMPLOYES.

The questions in this group relate in each case to the number of persons employed when the establishment is running in its full capacity, the number of employes classified as to sex, the total number of persons employed, the number of children between fourteen and eighteen years of age and the number of children under fourteen years of age at the time of inspection. The tables are so arranged as to show the number in each case of each establishment. These figures were gathered and compiled with special care and are valuable not only because of the laws which regulate the labor of children, but for general statistical purposes.

FIRE ESCAPES.

It will be noticed that in the schedule this question is so worded that the answers would naturally take the form of a brief description, not only of all fire escapes, such as properly come within that term, but also of all additional means that may be used as escapes in case of fire. A large proportion of the answers were also made in this way. As the styles of fire escapes used vary greatly, and as additional means may mean anything from stairways, ladders that may be raised and so utilized, to adjoining roofs or passages, these reports could not be boiled down under any convenient head and thus included in the table without taking too much space. Owing to these facts the table only shows the number of escapes with

which each plant, requiring such, was provided. The original reports, however, are kept on file and can, therefore, should occasion require it, be referred to.

STAIRWAYS.

These are often of the greatest importance in cases of fire, etc. Properly constructed they usually afford one of the safest means of escape, especially when located on the outside of the buildings. Stairways are also both directly and indirectly the causes of many accidents. This is mostly the case when improperly constructed or located and when not provided with hand rails, guards in front of openings and other safety appliances. Stairways were therefore carefully reported upon. As the table shows, these reports cover their number both on inside and outside of buildings, and as to whether or not handrails were provided and all dangerous openings guarded. In most of these respects stairways come within the factory laws. Many of the orders issued by the inspectors were for improvements of one kind or another on stairways which were considered unsafe or dangerous.

DOORS.

In 1885 a law was enacted in this state which provides that all factories, workshops, churches, schoolhouses, etc., erected after the passage of said act shall be so constructed that the doors shall swing outward or both in and out. In accordance with this the inspectors have endeavored to enforce this law wherever found to be violated. In most cases they have also been successful. In cases where their efforts were not met with success the failure was generally due to inability to show that the building was erected after the passage of this law. This suggests very forcibly the fact that this law is far from what it ought to be or what is needed in this respect. As already intimated, it only affects buildings erected after it went into force. Buildings erected previously to this date, therefore, cannot be reached regardless of how much a change in the swinging of doors is needed or how many people are even in danger of their lives because the doors cannot be opened

outwards. It need hardly be said that a large proportion of the factories, etc., now in use were erected before 1885. In justice to the employes in these buildings, this law ought to be amended so as to include all buildings of this nature regardless of when built. The table shows, of each establishment, whether the doors swing in or out. A careful study of these tables will, therefore, throw much light upon the condition of our factories in this respect, and thus upon the extent of the need for such an amendment as the one suggested. The orders issued by the inspectors for the changing of doors so as to swing out, constitute by far the greatest number of all the orders made. In many cases also employers, who could not be compelled by law to make such changes, voluntarily did so when their attention was called to the risks they were running.

ELEVATORS.

All elevators, whether used for carrying freight or passengers, are embraced in the inspection laws. The elevators in every factory visited were, therefore, closely inspected and their condition reported. The inspection covered everything about them from their construction to their cables, doors, and other openings. Many improvements were found necessary to their general safety and were therefore ordered and enforced. Most of these orders affected doors and guards around other openings. But in several cases cables and other essential parts of the elevator proper had to be changed or replaced. While the tables do not show all particulars about them as completely as the original reports, they still give a fair idea of their number, condition in general and the kind of doors used.

MACHINERY, ETC.

Chapter 549, laws of 1887, provides that all belting, shaftings, gearing hoist, flywheels, elevators and drums of manufacturing establishments so located as to be dangerous to employes when engaged in their ordinary duties shall be securely guarded and fenced; that all stationaries, vats, pans or other structure containing molten metals or hot liquids shall be

surrounded with proper safe-guards for preventing accident or injury to those employed at or near them. As it is the duty of this department to enforce these, as well as all other provisions mentioned in this part, the inspectors were on a constant lookout for violations of them. To enforce these provisions properly, however, is no easy matter. Much of the machinery or many of the objects included are so constructed that no safety appliance yet known can offer effective protection without lowering their usefulness for the purposes intended. What steps to take in such cases is always more or less puzzling. Often the matter has to be left where found. In the great majority of cases, however, the protection necessary could be provided without reducing to any great extent the working efficiency of the machinery in question. In such cases the laws were always enforced. The tables taken together with the orders issued show fairly well the condition of the factories in this respect.

SANITARY CONDITION.

Besides those concerning closets or toilet rooms there is only one question in the schedule bearing directly upon the sanitary condition in factories and workshops. The reason for this is, that in the law the provisions relating to it are expressed in general terms only and leaves much to the judgment of the inspectors. Sanitary rules or regulations cover, besides, so much ground, and violation of them differ so much, as to their nature, that the reports made could not be summed up under any other "head" than that used in the tables, without requiring more space than could be given to it. As it now stands the tables simply show whether proper toilet facilities are provided or not and whether the sanitary condition is good or bad. In every case, however, where the defects in the sanitary condition were of such nature that in the opinion of the inspectors improvements could be enforced, orders to that effect were issued. Those, therefore, who may desire to learn the condition in detail may find it by examining the orders issued.

MOTIVE POWER.

The information presented in this connection consists of the number of engines and boilers used, with the indicated horse-power for each establishment; also the indicated horse-power of water, electricity and gas where these forces were used for motive power. As this state has no provisions for the inspection of boilers nor for the examination and licensing of engineers, this information was given voluntarily. It is believed, however, to be practically correct, and taken in connection with much other data that is presented in this part, it makes a valuable addition to our sources of information, regarding the manufacturing industries in this state.

IMPROVEMENTS.

By improvements in this connection is meant all expenditures for new buildings and machinery only. The cost of ordinary repairs does not come under this head. The tables show separately for each establishment the amount thus invested.

VALUE OF GOODS MADE OR WORK DONE, COST OF RAW MATERIAL,
AMOUNT OF WAGES PAID IN 1896.

These facts were collected from all the establishments inspected. By value of the goods made, etc., is here meant the market value of the products of that year, or the amount for which they were actually sold. By cost of raw material is meant the stock and supplies used up or destroyed in manufactures during that year. By wages paid is, of course, meant the actual amount paid out as wages alone in turning out the above products. In table I. these figures have not been shown. The reasons for this are too obvious to need explanations. In the classification as to industries, however, they are included in full.

ACCIDENTS TO EMPLOYES.

Since factory inspection was first established in this state several efforts have been made to obtain data concerning ac-

idents to employes. At the so-called general inspection these efforts were continued. While thus a great many facts relating to such accidents have been from time to time collected and presented, it has not been claimed that, in any one case, the data given included all the accidents that had occurred in the manufacturing industries in the state within the period covered; nor are any such claims made now for the figures presented at this time. Under the circumstances this also is precisely what might have been expected. In this state there are no provisions requiring employers to furnish or report the particulars about any accident that may have occurred to any of their employes. While many employers were, regardless of this, willing to give all the facts they happened to remember about such accidents, others did not look upon it as their duty to furnish even such facts as they might have within easy reach, and hence refused to offer any assistance in this direction. It is easy to see, therefore, that this shortsighted policy alone, which in the end is certain to operate against the best interest of all concerned, is under the circumstances enough to defeat any efforts, such as we were in position to make, to secure full and complete data concerning all accidents in the state within any given time. Besides this, the inquiries about accidents have not at any time been organized on a sufficiently broad basis to bring the best information. This important undertaking, therefore, has been rather incompletely performed. That reliable data concerning accidents is of the greatest importance, no one will deny. Without it, including their causes, character and result, it is clearly impossible to determine in what industries they mostly occur or the kind of machinery that is mostly to blame,—information that is absolutely necessary in order that proper safety appliances may be provided. Such information is also necessary in order that legislators and the public may come to a full realization of the importance of protective measures along this line, and of their rigid enforcement. No manufacturing state or nation can in the long run afford to neglect the duty of making ample provisions for the collection and presentation of complete and reliable statistics and facts concerning accidents to working people in workshops and factories.

WEEKS IN OPERATION.

For the purpose of being able to present figures that in some respects, at least, might throw some light upon the industrial condition throughout the state, it was made a part of the duties of the inspectors, when beginning their work in the early part of 1897, to obtain from each one of the plants visited, full particulars regarding the length of time said plant was in operation during the previous year. As these duties were carefully carried out, the figures given, of the business year, are reliable and may be depended upon. Considerable time, however, has necessarily elapsed between the period covered by the inquiries and the issuing of this report. For this reason they are chiefly valuable for comparative purposes.

ORDERS ISSUED.

It is generally provided that the owner or occupant of a factory or workshop who has offended against, or neglected to comply with, the factory laws shall be notified of such offense or neglect in writing; and that, if the same is not corrected or remedied within a specified time—generally thirty days—formal complaint must be lodged with the district attorney of the county in which the offense is committed or the neglect occur, whereupon that official shall proceed at once against the offenders according to law. The first step taken by the inspectors, therefore, when any such offense or neglect is discovered is to issue an order for their correction, in which the offense or neglect, as well as the corrections or changes required, are specifically described. In many cases these orders are very readily complied with. In others they are complied with after some pressure only; while some resist until the matter is placed with the district attorney.

During 1897 no prosecutions were made necessary. The prospects also are that nearly, if not quite, all of the cases this year in which the assistance of county attorneys have been had, will be adjusted out of court. It has been the policy of this department, at least during the past four years, not to prosecute until all other means of bringing about the desired

improvements have failed. While this policy has been criticised in certain quarters it can be said in its support that in this way we have not failed to cause the required changes to be made in a single instance, except where our authority to act was so doubtful that for this reason legal proceedings were not thought wise. The orders thus issued will be found in full later in this part. In order to show the plant they affect the same running number has been used for the order as was used for the plant in the tables.

The facts gathered under these different heads from the various plants or establishments in the state have thus been tabulated and presented. Table I. shows in detail the particulars for each establishment visited at the general inspection, classified as to location. Table II. shows the totals for cities, villages and other places, of the plants inspected therein. The reports were also classified as to industries. For lack of space, however, the details of the classification could not be given; but in table III. the totals or summaries for each industry are presented.

It will be noticed in the tables that conditions or answers to inquiries are indicated by "letters" only. The following explanations of the meaning of these letters or of the terms for which they stand are therefore offered:

- A means automatic doors.
- B means bars, bad.
- D means doors.
- F means fair.
- G means good.
- I means idle, in.
- L means leased.
- N means no.
- O means own, out.
- R means running or in operation.
- S means slide or sliding doors.
- T means trap doors.
- Y means yes.

As these abbreviations are in all cases used under "headings" suggesting the nature of the answers they will cause little or no confusion.

SCHEDULE.

Name of firm?.....
 Location
 County of
 Business
 Established?
 Description of plant
 Does firm own or lease the buildings?.....
 Is the plant running or idle?.....
 If running is it full or part time?.....
 Hours per week running full time.....
 Hours per week at date of inspection.....
 Number of persons employed when running full capacity.....; Number of
 male employes at date of inspection.....; Females at date of inspec-
 tion; Total
 Number of children between the ages of 14 and 18 employed.....
 Number of children under 14 employed.....
 Number of escapes and additional means.....
 Main stairways outside,.....; inside,; Total.....
 Are all stair openings properly guarded?.....
 Have stairs hand-rails where necessary?.....
 Do main doors swing outward?.....
 Are doors locked or bolted during working hours?.....
 Condition, kind and number of elevators.....
 Are the cables in perfect order?.....
 Are all elevator openings properly guarded?.....
 Have the elevators trap or automatic doors?.....
 Are the wells properly guarded?.....
 Is all machinery, vats, pans, etc., properly guarded?.....
 Are suitable wash rooms and water closets provided?.....
 Are water closets for females separate and properly screened?.....
 What is the sanitary condition of shops?.....
 No. of boilers,..... No. of engines,..... Horse-power, [Steam..... Water.....
 Electricity]
 Cost of building improvements for year 1896, \$.....
 Cost of machinery for same period, \$.....
 Total value of raw material used in 1896, \$.....
 Average pay roll per month, \$.....
 Total amount of wages to Mechanics, Operatives and Manual Workers, paid in
 1896, \$.....
 Number of weeks in operation in 1896.....
 Have any accidents occurred at this factory since former inspection? If so, find
 out full particulars, if possible.....
 Action taken by inspector and general remarks:

MILWAUKEE,

Running number.	BUILDINGS.		PLANT.		HOURS PER WEEK.		EMPLOYEES.						Number of fire escapes.	STAIRWAYS.			
	1 to 2 stories.	3 or more stories.	Owned or leased.	Running or idle.	When running full time.	Date of inspection.	Full capacity.	Date of Inspection.						Outside.	Inside.	Openings guarded.	Have hand rails.
								Male	Female.	Total.	Between 14 and 18 years.	Under 14 years					
1...	1	3	O	R	60	60	250	150	55	205	55	0	2	1			
2...	1	1	L	...	60	60	100	100	50	60	18	0	1	1		Y	Y
3...	1	1	L	...	48	48	22	22	...	22	0	0	1	1			
4...	2	3	O	...	60	60	109	109	...	109	28	0	2	1			
5...	4	...	O	...	60	60	65	34	16	50	10	0	...	2			
6...	2	...	L	...	60	60	20	4	16	20	0	0	...	1			
7...	1	2	L	...	60	60	30	15	...	15	0	0	...	1			
8...	...	3	L	...	60	60	7	4	1	5	1	0	...	1			
9...	...	2	O	...	48	48	120	114	...	120	1	0	3	1			
10...	...	1	O	...	54	54	70	59	4	63	14	0	...	1			
11...	13	9	O	...	60	60	1600	1300	...	1300	0	0	...	18			
12...	3	...	O	...	60	60	115	115	...	115	0	0	...	1			
13...	...	1	O	...	60	60	76	45	30	76	8	0	1	1			
14...	P	1	O	...	60	60	5	4	1	5	2	0	1	1			
15...	1	...	L	...	60	60	20	6	9	15	10	0	...	1			
16...	...	1	L	...	60	48	10	33	66	99	48	0	1	1			
17...	1	1	L	...	53	53	139	121	18	139	31	0	3	1			
18...	...	1	L	...	60	60	28	3	12	15	0	0	1	1			
19...	P	1	L	...	59	59	40	16	0	16	0	0	2	1			
20...	P	1	L	...	60	60	140	90	0	90	18	2	...	1			
21...	...	1	L	...	60	60	7	2	5	7	0	0	1	1			
22...	1	1	L	...	60	60	26	26	0	26	0	0	...	1			
23...	1	3	O	...	60	60	45	30	0	30	0	0	1	1			
24...	1	...	L	...	60	60	18	1	11	12	2	0	1	1			
25...	2	1	O	...	144	144	49	45	0	45	0	0	3	1			
26...	1	...	O	...	60	48	5	2	0	2	0	0	...	...	
27...	1	...	O	...	60	60	6	3	3	6	3	0	...	...	
28...	P	1	L	...	52	52	10	5	0	5	0	0	1	...	2		
29...	1	2	L	...	60	60	25	25	0	25	0	0	...	2			
30...	1	...	L	...	60	60	25	2	17	19	...	...	2	1			
31...	2	...	O	...	60	30	25	15	0	15	0	0	...	1			
32...	P	1	L	...	60	60	80	6	1	7	0	0	2	...	...
33...	...	1	L	...	60	48	3	0	3	0	0	0	...	1			
34...	P	1	L	...	60	60	6	6	0	6	1	0	...	...	
35...	1	1	L	...	60	60	12	7	0	7	1	0	...	...	
36...	1	...	O	...	60	60	5	3	0	3	0	0	...	1			
37...	...	2	O	...	60	60	80	0	0	80	0	0	...	...	
38...	4	...	O	...	60	60	300	140	0	140	2	0	...	2			
39...	1	1	O	...	60	60	8	1	7	8	0	0	...	1			
40...	P	1	L	...	60	60	150	100	50	150	14	0	2	1			
41...	...	1	L	...	60	60	20	18	2	20	2	0	3	3			
42...	2	...	O	...	59	59	75	65	0	65	14	0	...	...	
43...	3	3	O	...	60	60	370	368	0	368	26	0	3	2			
44...	P	5	L	...	54	54	12	12	0	12	0	0	1	4			
45...	...	...	O	...	60	60	200	...	100	100	...	...	...	1			
46...	1	...	O	...	60	60	5	2	0	2	...	...	...	1			
47...	1	1	O	...	60	60	50	42	6	48	2	0	1	1			
48...	2	1	L	...	60	60	28	24	0	24	8	0	...	4			
49...	...	1	L	...	60	60	25	13	2	15	2	0	1	...			
50...	2	1	L	...	60	60	7	3	0	3	0	0	...	2			

FACTORY INSPECTION.

215

MILWAUKEE COUNTY,

Running number	DOORS.		ELEVATORS.				Machinery vats and pan guarded.	CLOSETS.		Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER.		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.		Properly provided.	Screened.						Steam.	Water.	Electric, Gas.
1...	O	N	2	Y	D	Y	Y	Y	G	52	N	2	1	50		9	
2...	O		1		D				G	52			1	10			
3...	I		1		D				G	52		2	1	175			
4...	S		2		D				G	52		1	1	24			
5...	O								G	46							
6...	I				B				F	52		1	1	8			
7...	I		2		B				F	52		2	1	100			
8...	I								G	52							
9...	O		4	Y	D				G	50		2	1	200			
10...	O		1		D				G	52			2			17	
11...	B		11		D				G	52	N	8	5	950			
12...	I		1		D				G	52		2	1	60			
13...	O		1		D				G	44		1	1	20			
14...	O		1		D				G	52				5			
15...	O		1		B				F	51		1	1	40			
16...	I		1		D				G	52		1	1	75			
17...	I		1		D				G	52		2	1	40			
18...	I								G	52			1	16			
19...	I		1		D				F							4	
20...	I		1		B				F	52	N	1	1			40	
21...	I		1		D				G	52		1	1	45			
22...	I								F	52		2	1	85			
23...	I		1		D				F	52		2	1	45			
24...	I								G	62		1	1	10			
25...	I								G	52		2	1	500			
26...	I								G	52		1	1	16			
27...	I								G	52		1	1	20			
28...	I		1	Y	D				G								
29...	I								G	52		9	6	1775			
30...	I								G	52		1	1	25			
31...	I								G			2	1	90			
32...	O		1		D				F	32				20			
33...	O								G	52	N						
34...	O								G	52				2			
35...	O								G			1	1	12			
36...	I								G	45		1	1	16			
37...	I		2		B				G	52							
38...	S		1		D				G	52	N	2	1	225			
39...	O				D				G	47		1	1	20			
40...	O		1		D				G			2	1	50			
41...	S		1		D				F	52		4	1	80			
42...	O				D				F	52		3	1	75			
43...	O		2		D				F	52		4	2	180			
44...	I		2		D				G	52		1	1	07			
45...									G	52	1	5	8	250			
46...	I								G	51	N						
47...	I		1		A				G	52				20			
48...	O				B				G	52	N	1	2	45			
49...	I		1		B				G	52			1	10			
50...	I								G	52		1	1	30			

MILWAUKEE,

Running number.	BUILDINGS.		PLANT.	Running or idle.	HOURS PER WEEK.		EMPLOYEES.					Number of fire escapes.	STAIRWAYS.					
	1 to 2 stories.	3 or more stories.			Owned or leased.	When running full time.	Date of inspection.	Full capacity.	Date of Inspection.					Outside.	Inside.	Openings guarded.	Have hand rails.	
									Males.	Female.	Total.		Between 14 and 18 years.					Under 14 years.
51..	1	.....	O	R	60	60	30	18	0	18	1	0	.....	.....	.....	.....
52..	1	.....	O	..	60	60	10	6	0	6	0	0	.....	.....	.....	.....
53..	2	.....	O	..	60	60	170	111	35	146	42	0	.....	1	Y	Y
54..	14	5	O	..	60	60	227	227	0	227	0	0	.....	3	..	..
55..	3	.....	O	..	60	48	100	100	0	100	1	0	4	2	..	..
56..	1	.....	L	R	60	60	8	7	0	7	2	0	.....	.....	.....	.....
57..	1	.....	O	R	60	60	500	250	100	350	125	1	2	1	Y	Y	
58..	6	2	O	..	60	48	218	110	.....	110	2	0	2	1	Y	Y	
59..	1	.....	L	..	60	48	8	5	.....	5	.....	.....	1	4	..	..
60..	1	.....	L	..	60	60	14	5	.....	5	.....	.....	1	Y	Y	Y
61..	1	1	O	..	59	59	47	19	.....	19	1	.....	1	1	..	..
62..	P	1	L	..	60	60	30	24	.....	24	2	.....	1	1	..	..
63..	2	.....	L	..	60	60	25	5	15	20	2	.....	1	1	..	..
64..	1	.....	O	..	60	60	6	6	.....	6	.....	.....	1	.....	.....	.....
65..	1	1	O	..	60	60	45	35	.....	35	4	.....	.....	2	.....	.....
66..	P	1	L	..	60	48	25	25	.....	25	.....	2	.....	1	..	..
67..	5	.....	O	..	60	60	300	265	.....	265	8	.....	1	1	..	..
68..	P	6	L	..	56	56	33	22	2	24	1	.....	2	1	..	..
69..	5	.....	O	..	60	60	75	75	.....	75	.....	.....	.....	.....	.....	.....
70..	4	.....	O	..	60	60	85	65	.....	65	6	2	.....	.....	.....	.....
71..	1	.....	O	..	60	60	100	20	.....	20	.....	.....	.....	.....	.....	.....
72..	1	1	O	..	60	60	18	15	.....	15	.....	.....	2	.....	.....	.....
73..	1	.....	O	..	60	60	5	5	.....	5	.....	.....	.....	.....	.....	.....
74..	1	1	L	..	60	60	90	11	65	76	10	.....	1	1	..	..
75..	P	3	L	..	60	60	16	3	8	11	2	.....	.....	1	..	..
76..	2	3	O	..	60	60	45	20	.....	20	.....	.....	.....	3	..	..
77..	1	.....	O	..	60	48	95	52	30	82	29	.....	1	1	..	..
78..	3	.....	O	..	60	60	18	18	.....	18	4	.....	.....	2	..	..
79..	2	1	O	..	59	54	35	25	.....	25	.....	.....	.....	2	..	..
80..	3	.....	O	..	60	60	125	90	.....	90	2	.....	.....	.....	.....	.....
81..	5	.....	O	..	60	54	70	56	.....	56	.....	.....	.....	1	..	..
82..	21	1	O	..	60	45	2165	2000	.....	2000	3	.....	.....	4	..	..
83..	4	.....	L	..	48	48	134	134	.....	134	.....	.....	.....	.....	.....	.....
84..	P	1	L	..	60	60	25	15	.....	15	4	.....	.....	1	..	..
85..	P	3	L	..	60	60	7	5	2	7	1	.....	1	1	..	..
86..	1	1	L	..	60	60	21	20	1	21	1	.....	1	1	..	..
87..	3	.....	O	..	60	24	10	2	.....	2	.....	.....	1	1	..	..
88..	P	1	L	..	60	60	8	8	.....	8	2	.....	.....	1	..	..
89..	1	.....	O	..	60	60	10	6	.....	6	.....	.....	.....	.....	.....	.....
90..	4	1	O	..	60	60	100	82	.....	82	5	.....	1	3	..	..
91..	.....	1	L	..	60	60	9	9	.....	9	.....	1	.....	1	..	..
92..	5	.....	O	..	60	34	200	125	.....	125	.....	.....	1	2	..	..
93..	2	.....	O	..	60	48	35	5	.....	5	.....	.....	.....	.....	.....	.....
94..	1	.....	O	..	48	48	6	4	.....	4	.....	.....	.....	1	..	..
95..	4	4	O	..	60	60	40	40	.....	40	.....	.....	.....	3	..	..
96..	2	.....	O	..	60	60	20	6	3	9	.....	.....	.....	1	..	..
97..	2	.....	O	..	60	48	26	26	.....	26	.....	.....	.....	1	..	..
98..	1	.....	O	..	60	60	12	12	.....	12	4	.....	1	1	..	..
99..	1	.....	L	..	60	48	5	1	.....	1	.....	.....	.....	1	..	..
100..	2	.....	L	..	60	60	25	14	.....	14	5	.....	.....	.....	.....	.....

MILWAUKEE COUNTY,—Continued.

Running number.	DOORS.		ELEVATORS.				Machinery vats and pan guarded.	CLOSETS.		Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER.		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.		Properly provided.	Screened.						Steam.	Water.	Electric, Gas
51..	O	..	1	Y	B	Y	..	Y	..	G	52	..	..	..	..	..	..
52..	S	..	1	..	B	..	..	Y	..	G	52	..	..	..	..	..	..
53..	S	..	4	..	B	..	..	..	..	G	52	..	..	..	..	..	..
54..	H	..	4	..	T	..	..	..	..	G	52	..	..	..	..	..	..
55..	I	..	1	..	D	..	..	..	..	F	52	..	..	..	..	..	50
56..	I	N	..	..	..	..	..	Y	..	G	52	..	..	..	..	..	..
57..	O	..	2	Y	B	Y	Y	Y	Y	G	52	..	..	..	..	..	..
58..	I	..	4	..	G	..	..	..	..	G	48	..	..	1	100	..	..
59..	I	..	..	..	..	..	..	..	..	G	52	..	..	..	..	..	..
60..	I	..	..	..	..	..	..	..	..	G	52	..	..	..	..	..	..
61..	I	..	..	..	..	..	..	..	..	G	52	..	..	1	1	75	..
62..	S	..	1	..	S	..	..	..	..	G	52	..	..	1	10	..	..
63..	I	..	..	..	..	..	..	..	..	G	52	..	..	1	15	..	..
64..	I	..	..	..	..	..	..	..	..	G	40	..	..	1	10	..	..
65..	I	..	..	..	..	..	..	..	..	G	52	..	..	1	1	35	..
66..	I	..	1	..	D	..	..	..	..	G	50	..	..	..	..	..	..
67..	S	..	..	..	..	..	..	..	..	G	40	..	..	3	1	150	..
68..	I	..	1	..	G	..	..	..	..	G	52	..	..	..	..	..	8
69..	I	..	..	..	..	..	..	..	..	..	28	..	..	2	2	170	..
70..	I	..	..	..	..	..	..	..	..	..	28	..	..	2	2	170	..
71..	..	..	..	..	..	..	..	..	..	..	16	..	..	1	1	40	..
72..	I	..	..	..	..	..	..	..	..	G	52	..	..	..	..	..	..
73..	I	..	..	..	..	..	..	..	..	G	52	..	..	..	..	..	..
74..	I	..	1	..	D	..	..	..	..	G	62	..	..	1	1	30	..
75..	I	..	..	..	..	..	..	..	..	G	52	..	..	1	1	15	..
76..	I	..	2	..	B	..	..	..	..	G	52	..	..	1	1	30	..
77..	I	..	1	..	G	..	..	..	..	F	52	..	..	1	1	60	..
78..	I	..	..	..	..	..	..	..	..	G	52	..	..	2	1	12	..
79..	O	..	..	..	..	..	..	..	..	G	52	..	..	1	1	20	..
80..	O	..	..	..	..	..	..	..	..	..	26	..	..	5	3	326	..
81..	I	..	..	..	..	..	..	..	..	G	52	..	..	2	1	33	..
82..	S	..	4	..	B	..	..	..	..	G	52	..	..	14	9	750	..
83..	I	..	..	..	..	..	..	..	..	F	52	N	..	1	1	12	..
84..	I	..	1	..	D	..	..	..	..	G	16	..	..	1	1	12	..
85..	I	..	1	..	..	..	..	..	..	G	52	..	..	..	..	..	..
86..	I	..	2	..	..	..	..	..	..	G	52	..	..	..	..	..	..
87..	I	..	..	..	..	..	..	..	..	G	12	..	..	..	1	25	..
88..	I	..	..	..	..	..	..	..	..	F	52	..	..	..	..	..	..
89..	I	..	..	..	..	..	..	..	..	F	26	..	..	..	1	5	..
90..	O	..	1	..	D	..	..	..	..	F	62	..	..	3	1	75	..
91..	O	..	1	..	D	..	..	..	..	F	50	..	..	2	1	30	..
92..	S	..	2	..	..	..	..	..	..	G	52	..	..	2	1	250	..
93..	S	..	..	..	..	..	..	..	..	G	52	..	..	1	1	60	..
94..	S	..	..	..	..	..	..	..	..	G	42	..	..	..	..	..	..
95..	I	..	..	..	..	..	..	..	..	G	52	..	..	3	2	120	..
96..	I	..	..	..	..	..	..	..	..	G	52	..	..	..	..	..	8
97..	I	..	..	..	..	..	..	..	..	G	24	..	..	2	2	135	..
98..	I	..	..	..	..	..	..	..	..	G	52	..	..	..	..	..	..
99..	I	..	..	..	..	..	..	..	..	G	52	..	..	..	..	..	..
100..	I	..	..	..	..	..	..	..	..	G	49	..	..	..	..	..	10

MILWAUKEE,

Running number.	BUILDINGS.		PLANT.		HOURS PER WEEK.		EMPLOYEES.					Number of fire escapes.	STAIRWAYS.				
	1 to 2 stories.	3 or more stories.	Owned or leased.	Running or idle.	When running full time.	Date of inspection.	Full capacity.	Date of Inspection.					Outside.	Inside.	Openings guarded.	Have hand rails.	
								Male	Female.	Total.	Between 14 and 18 years.						Under 14 years
101..				R	60	48	60	12	10	22		1		1	Y	Y	
102..	P	1	L		60	60	60	6	14	20		1	1	1			
103..		5	O		60	45	325	200		200	35	1	3	3			
104..		2	O		60	60	75	65		65		1					
105..		2	L		60	60	32	6	1	7	1		2				
106..		3	O		59	53	20	7	8	15	3		1				
107..		4	L		60	48	750	525		525		2	10				
108..		1	L		60	48	75	5	20	25		1	1				
109..		1	L		57	57	90	65		65	5	2	1				
110..		2	O		60	60	60	55		55		1	2				
111..		1	L	R	59	59	50	36		36	12		2	Y	Y		
112..	P	1	L	R	60	60	8	4	4	8	2	1					
113..		3	O		60	48	20	10		10		2	2				
114..		1	L		60	60	18	6		6			2				
115..		3	O		60	60	35	35		35	2						
116..	P	3	L		60	60	5	2		2	2	1	1				
117..		1	O		60	54	50	30		30	2						
118..		1	L		60	60	25	7	18	25		1	3				
119..		2	O		60	48	10	5		5							
120..		1	L		60	60	15	3	10	13	4		1				
121..		2	O		60	60	25	13		13		3	1				
122..		2	O		60	60	50	50		50	3		1				
123..		1	O		60	60	8	5		5		3	1				
124..		4	O		60	60	43	23		23							
125..	P	3	L		60	60	12	9	3	12	3		2				
126..		1	O		144	144	72	72		72		5	2				
127..		4	O		60	60	125	80		80			1				
128..	P	1	O		60	40	10	1	4	5							
129..		1	O		60	48	30	6	21	27	8		1				
130..		3	O		60	48	18	3		3		1	1				
131..		1	L		60	48	40	12		12	3		2	1			
132..	P	1	O		60	48	3	1		1							
133..		1	O		59	59	10	9		9			1				
134..		1	O		60	54	30	25		25							
135..		1	L		60	60	35	12		12			1				
136..		2	O		60	60	35	12		12			1				
137..		1	O		60	60	10	3	7	10							
138..		2	O		60	40	5	1		1			1				
139..		4	O		60	60	102	102		102	22		1				
140..		1	O		60	48	14	5		5			1				
141..	P	1	L		60	60	35	6	21	27	2		1				
142..		1	L		60	60	120	110	7	117		1	1				
143..		1	L		60	60	15	9		9							
144..		1	L		48	48	10	10		10	1		1	Y	Y		
145..		3	O		144	96	48	48		48		1	1				
146..		1	L		59	59	30	30		30			1	1			
147..		1	L		59	59	45	13	30	43	21	1	1	1			
148..		2	O		48	48	60	20		20	2	1	1				
149..		2	O		60	60	13	8		8							
150..		4	O		59	59	400	250		250		2	2	Y	Y		

MILWAUKEE COUNTY,—Continued.

Running number	DOORS.		ELEVATORS.				Machinery vats and pan guarded.	CLOSETS.		Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER.		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.		Properly provided.	Screened.						Steam.	Water.	Electric, Gas.
101..	I	N	1	Y	S	Y	Y	Y	Y	G	52	N	1	1	..	4	
102..	I	..	..	..	..	..	..	..	..	G	52	..	1	1	25	..
103..	S	..	4	..	..	..	..	..	..	G	41	..	3	3	500	..
104..	I	..	1	..	D	..	..	..	..	G	52	..	1	1	75	..
105..	O	..	..	..	..	..	..	..	..	F	52	..	..	..	..	..
106..	O	..	1	..	B	..	..	..	..	F	52	..	1	1	50	..
107..	O	..	8	..	G	..	..	..	..	F	52	..	16	2	785	..
108..	O	..	1	..	R	..	..	..	..	G	45	..	..	1	..	..
109..	O	..	2	..	B	..	..	..	..	G	52	..	2	1	125	6
110..	S	..	..	..	..	..	..	..	..	G	36	..	4	1	700	..
111..	I	N	1	Y	S	Y	Y	..	..	G	52	N	..	..	15	..
112..	O	..	2	..	G	..	..	Y	Y	G	52	..	..	1	..	..
113..	S	..	..	..	..	..	..	..	..	G	52	..	1	1	65	..
114..	O	..	2	Y	B	Y	..	Y	..	G	52	..	..	2	20	..
115..	O	..	..	..	..	..	..	..	..	G	26	..	2	2	50	..
116..	O	N	1	Y	D	Y	..	Y	..	G	52	..	..	..	2	..
117..	S	..	..	..	..	..	..	..	..	G	52	..	1	1	35	..
118..	S	..	..	..	..	..	..	..	Y	G	52	..	1	1	15	..
119..	S	..	..	..	..	..	..	..	..	G	52	..	1	1	30	..
120..	I	..	..	..	..	..	..	Y	Y	G	52	..	..	..	..	..
121..	I	..	..	..	..	..	..	..	..	G	52	..	1	1	35	..
122..	S	..	1	Y	D	Y	..	..	..	G	52	..	1	1	60	..
123..	O	..	..	..	..	..	..	..	..	G	26	..	1	1	15	..
124..	O	..	..	..	..	..	..	Y	..	G	52	..	2	1	125	..
125..	I	..	..	..	..	..	..	..	Y	G	52	..	1	1	20	..
126..	I	..	1	Y	G	Y	..	..	..	G	52	..	4	2	800	..
127..	S	..	..	..	..	..	..	..	..	G	35	N ²	4	5	250	..
128..	I	..	..	..	..	..	..	..	..	G	52	..	1	1	15	..
129..	I	..	2	Y	G	Y	..	..	Y	F	48	..	1	1	35	..
130..	I	..	..	..	..	..	..	..	..	G	32	..	1	1	35	..
131..	O	..	1	Y	B	Y	..	..	..	G	52	..	1	1	25	..
132..	I	..	..	..	..	..	..	..	..	G	26	..	..	..	..	..
133..	O	..	..	..	..	..	Y	..	..	F	52	..	1	1	20	..
134..	O	..	..	..	..	..	..	..	..	G	52	..	2	2	180	..
135..	O	N	..	..	..	..	..	Y	..	G	52	..	1	1	40	..
136..	I	..	..	..	..	..	..	..	..	G	..	N	..	1	10	..
137..	I	..	..	..	..	..	..	..	Y	G	52	..	1	1	12	..
138..	S	..	..	..	..	..	..	..	..	G	36	..	1	1	20	..
139..	I	..	1	Y	B	Y	..	..	..	G	52	..	3	1	200	..
140..	S	..	..	..	..	..	..	Y	..	G	52	..	..	..	..	..
141..	I	..	..	..	..	..	Y	..	Y	G	52	..	..	..	10	..
142..	I	..	2	Y	D	Y	..	..	..	G	52	..	2	3	115	..
143..	I	..	..	..	..	..	..	..	..	G	52	..	1	..	4	..
144..	I	..	..	..	..	..	..	..	..	G	52	..	..	..	..	..
145..	O	..	1	Y	B	Y	Y	..	..	G	52	..	5	2	800	..
146..	S	..	..	..	..	..	..	..	..	G	52	1	1	2	50	..
147..	I	..	1	Y	D	..	..	..	Y	F	50	N	1	1	..	4
148..	I	..	1	..	D	..	..	..	..	G	52	..	2	1	100	..
149..	O	..	..	..	..	..	..	..	..	G	52	..	1	1	10	..
150..	O	N	2	Y	B	Y	..	Y	..	G	52	..	3	1	225	..	

MILWAUKEE COUNTY,—Continued.

Running number	DOORS.		ELEVATORS				Machinery vats and pan guarded.	CLOSETS.		Sanitary condition.	Weeks in operation, 1906.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER		
	Swing in or out.	Locked during office hours.	Number.	Condition of cabin's good.	Kind of doors.	Openings guarded.		Properly provided.	Screened.						Steam.	Water.	Electric, Gas
151..	I	N					Y	Y	G	52	N						
152..	O								G	52							
153..	O						Y	Y	G	52							
154..	O								G	52		1	1	10			
155..	I		1	Y	A	Y	Y		G	52		1	1	40			
156..	I		1		A				G	49		1	1	40			
157..	O								G	52							
158..	I		1	Y	B	Y	Y	Y	F	52		2	2	100			
159..	I								F	52		2	1	35			
160..	I								G	52							
161..	O		1	Y	D	Y	Y		G	40			1				8
162..	I		1		G				G	38		1	1	16			
163..	I						Y		G	52		2	1	75			
164..	I								G	52		1	1	30			
165..	S								G	52		1	1	35			
166..	I	N	1	Y	A	Y	Y	Y	G	52	N	1					
167..	S		2		G				G	48		2	1	250			
168..	I								F	52		1	1	22			
169..	O		4	Y	D	Y		Y	F	52		2	2	225			
170..	I								G	52		2					
171..	O		1	Y	A	Y	Y	Y	G	52		1	2	50			
172..	I								G	52		1	1	20			
173..	I								G	47		2	1	300			
174..	O		2	Y	D	Y			G	52		2	1	60			
175..	I								G	36							
176..	I						Y	Y	G	41		4	1	125			
177..	O		4	Y	D	Y		Y	G	52		3	3	385			
178..	I								G	52		1	1	6			
179..	I								G	52		1	1	54			
180..	S							Y	G	52		1	1	75			8
181..	O		1	Y	G	Y			G	52				10			
182..	O								G	52		1		3			
183..	O								G	52		1	1	20			
184..	O		1	Y	B	Y		Y	F	48		1		20			
185..	O								F	52							
186..	O		1	Y	D	Y	Y	Y	F	52			1	2			
187..	I		2		B				F	52		3	1	250			
188..	I		2		B				F	52		3	1	15			
189..	O		1	Y	D	Y		Y	F	52		1	1	40			
190..	O						Y	Y	G	50				H			
191..	O		1		D		Y		G	52		1		H			
192..	O		1		A			Y	F	52		1	1	50			
193..	O		1	Y	B	Y			G	52				8			
194..	I		1		B				G	52		1	1	14			
195..	I		1		B				F	52		1	2	10			
196..	S								G	52		2	1	140			
197..	O		1	Y	D	Y		Y	G	52		2	1	75			
198..	O		1						G	52				16			
199..	I		2		A				F	52		1	3	120			
200..	I								F	52		1	1	10			

MILWAUKEE.

Running number.	BUILDINGS.		PLANT.	Running or idle.	HOURS PER WEEK.		EMPLOYEES.					Number of fire escapes.	STAIRWAYS.					
	1 to 2 stories.	3 or more stories.			Owned or leased.	When running full time.	Date of inspection.	Full capacity.	Date of Inspection.					Outside.	Inside.	Openings guarded.	Have hand rails.	
									Male	Female.	Total.		Between 14 and 18 years.					Under 14 years.
201..		2	O	R	60	60	11	11		11					2	Y	Y	
202..		3	O		60	60	12	12	3	6					2	Y	Y	
203..	P	1	O		60	60	8	8	2	6				1	1			
204..		1	O		60	30	6	6	1	1								
205..		2	O		60	60	18	7		7					1	Y	Y	
206..		1	O		60	60		1	1	1					1			
207..		1	O		60	48	110	30	15	45	4		1					
208..		3	O		60	60		2	2	40		3			2			
209..		1	O		59	59	15	14	1	15	2		1					
210..		1	O		60	48		4		4				1				
211..		1	L		60	60		5	5	5				1				
212..		2	O		60	54	15	12		12	1			1				
213..		1	L		60	60	6	6		6	2			1				
214..		1	L		60	60	12	12		12			1		1			
215..		1	O		60	48		3	3	3								
216..		3	O		59	59	26	26		26				2	Y	Y		
217..		1	O		60	60	21	11	10	21		1		1				
219..	P	1	L		48	48	75		75	75	26		1	1				
220..		1	O		60	60	5	3		3			1		1			
221..		2	L	R	60	60	35	30		30				2	Y	Y		
222..		1	O		60	48	40	30		30	10		1					
223..		1	L		60	40	100	30	70	100	35			3				
224..		2	O		60	60	14	7		7			1		1			
225..		1	O		60	60	8	8		8				4				
226..		1	O		60	60	39	39		39				2				
227..		1	O		60	70	70	70	1	71	3		1		1			
228..		1	L		60	60	15	8	7	15	2		1		1			
229..		2	O		60	60	150	90		90			1					
230..		1	O		60	60	14	14		14	1			1				
231..		2	O		60	60	40	20		20				2				
232..		6	O		60	60	85	85		85	3			1	2			
233..		1	O		60	40	22			22	3		1		1			
234..		1	O		60	48	10	6		6			1		1			
235..		5	O		60	57	350	150	14	164	11		3		4			
236..		1	O		60	60	5	2		2	1			1				
237..	P	1	L		60	60	5	5		5	1			1				
238..		1	L		60	60	10	2	3	5				1				
239..		3	O		60	30	5	2		2	1			1				
240..		3	O		60	60	20	12		12	3			1				
241..		5	O		60	60	15	15		15				2				
242..		25	O		110	110	1615	1200		1200	2			1	2			
243..		1	O		59	59	15	8	2	10	4			2				
244..		1	L		60	60	30	26	1	27			1		1			
245..		2	O		60	60	12	8		8	1							
246..		3	O		60	30	100	50		50	3		1	1	1			
247..		2	O	I R	60	60	6			6				1				
248..		2	L		60	60	15	5		5				2				
249..		1	O		60	60	40	5		40	8			1	1			
250..		1	O		60	60	26	19	7	26	9		2		2			

MILWAUKEE COUNTY,—Continued.

Running number.	DOORS.		ELEVATORS.				Machinery vats and pan guarded.	CLOSETS.		Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER.		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.		Properly provided.	Screened.						Steam.	Water.	Electric, Gas.
201..	I	N	1	Y	B	Y	Y	Y	Y	G	52						
202..	I									G	52						
203..	I									G	52		1	1	10		
204..	I									G	26						
205..	O		1	Y	D	Y	Y	Y		G	48		1	1	20		
206..	O									F	52		1	1	8		
207..	I		2	Y	G	Y		Y	Y	G	52			1	4		
208..	O									G	52			1	375		
209..	I		1	Y	A	Y			Y	G	52		2	3	10		
210..	I									G	26						
211..	S						Y			F	52		1	1	75		
212..	I						Y			G	50		1	1	20		
213..	O							Y		G	52						
214..	I		1	Y	B					G	52		1	1	18		
215..	I										26		1	1	10		
216..	I		1	Y	B	Y	Y	Y		G	52		1	1	35		
217..	I		1		D				Y	G	45		1				2
218..	I		1		D					G	52						
219..	I									G	52						
220..	S									G	37						
221..	I	N	1	Y	S	Y	Y	Y		G	52	N	2	1	20		
222..	O									G	52			1			5
223..	I							Y	Y	G	50		1	1	25		
224..	I									G	39						
225..	I									G	52			1	4		
226..	I		1	Y	D	Y				G	52		2	1	30		
227..	S		1		D				Y	G	52		1				
228..	I		1		B		Y			G	52			1			3
229..	S		1		B					G	52		2	1	100		
230..	I									F	26						
231..	I		2	Y	B	Y		Y		F	26		1	1	30		
232..	O							N		F	52		2	1	75		
233..	I		1	Y	T	Y		Y		F	52						
234..	I		1		B					G	52		1	1	20		
235..	O		1		G				Y	G	52	1	2	1	150		
236..	I									G	49	N					
237..	I							Y		G	52						
238..	I								Y	G	52						
239..	I									G	44						
240..	I							Y		G	52		1				
241..	I						Y			F	52			1	60		
242..	I							Y		F	52		3	60	38	6000	
243..	I								Y	G	52	N	1	1	15		250
244..	I		1	Y	B	Y				G	52		1	1			2
245..	I									G	40		1	1	12		
246..	S							Y		G	40						
247..	S									G	40						
248..	O									G	44	N	1	1			
249..	O		1	Y	G	Y	Y	Y	Y	G	52		1	1	40		
250..	I		2		G					G	52		1	1	8		
										G	52						

MILWAUKEE,

Running number.	BUILDINGS.		PLANT.	HOURS PER WEEK.	EMPLOYEES.				STAIRWAYS.						
	1 to 2 stories.	3 or more stories.			Owned or leased.	Running or idle.	When running full time.	Date of inspection.		Full capacity.	Date of Inspection.				
			Male	Female.					Total.		Between 14 and 18 years.	Under 14 years	Number of fire escapes.	Outside.	Inside.	Openings guarded.	Have hand rails.
251..	1		O	R	60	30	5	1	1	1	26	2	2	Y	Y
252..		1	I		60	60	200	40	60	100	26	2	2		
253..	1	1	O		60	60	125	125		125	14		1		
254..	1	1	O		60	60	55	48		55	9	1	1		
255..	2		O		59	59	12	5		5			1		
256..	P	1	L		52	52	75	68	7	75	9	1	1		
257..		1	L		60	60	20	10	6	16		1	1		
258..	P	1	L		60	60	40	25		25	4		1		
259..		1	L		60	60	350	5	300	305	225	1	2		
260..	P	1	L		60	48	40	3	9	12	6		1		
261..		1	L		54	54	8	8		8		1	1		
262..	1		O		60	60	10	6		6	1		1		
263..	4	P	L		59	59	60	45		45		1	1		
264..	1	P	O		60	60	50	47	3	50		1	1		
265..	2		O		60	60	35	25		25			1		
266..	7	5	O		60	60	900	605	260	865	425	11	4		
267..	1	1	L		60	54	30	10		10			1		
268..		1	L		60	60	80	40	30	16		1	1		
269..	P	1	L		60	60	40	38	2	40	6	1	1		
270..	2	1	L		60	48	45	15	3	20	2	2	1		
271..		1	L		60	60	45	35		35	3		2		
272..	2		L		60	60	8	5		5	1			Y	Y
273..	1		L		54	48	58	53	5	58	11		1	Y	Y
274..		1	L		60	60	20	19		19		1	1		
275..		1	L		60	54	75	55	20	76	10	1	1		
276..	3		O	R	60	54	18	10		10			1	Y	Y
277..	2		O		60	60	58	58		58	6		1		
278..	P	1	L		60	30	5	1		1			1		
279..	P	1	L		60	60	5	2		2	2				
280..	2	4	L		60	60	52	52		52		3	9	Y	Y
281..	2		L		60	48	80	20	10	30	4		2		
282..	1		L		60	60	13	10		10		1	1		
283..	1		L		60	60	10	6		6		1	1		
284..	1		L		60	60	6	1		1			1		
285..	1		L	R	60	60	6	1		1			1	Y	Y
286..	1		O		60	60	6	4		4			1	Y	Y
287..		1	L		60	60	12	6		6			1		
288..	P	1	L		60	60	50	50		50		1	1		
289..	5	3	L		60	60	16	14		14			4		
290..	1		L		59	59	28	28		28			1		
291..	2	1	L		60	48	37	17		17	1	1	1		
292..	3		L		60	54	26	26		26			1		
293..	3		L		60	60	25	15		15	2		1		
294..	P	1	L		60	60	30	2	12	14			3	Y	Y
295..	10	1	L		60	48	130	58		58					
296..	2	1	L		60	60	145	145		145	3		1	2	
297..		P	L		48	48	200	80	120	200	81	2	2		
298..	P	1	L		60	4	8	5		5			3		
299..		1	O		60	60	150	146	4	150	35	1	2		
300..		1	L		60	60	75	45	6	51	21	1	2		

FACTORY INSPECTION.

225

MILWAUKEE COUNTY,—Continued.

Running number	DOORS.		ELEVATORS.				Machinery vats and pan guarded.	CLOSETS.			Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.		Properly provided.	Screened.	Sanitary condition.					Steam.	Water.	Electric, Gas
251..	S	N					Y			G	26	N	1	1	6		
252..	I		23	Y	B	Y		Y	Y	G	50		1	1	25		
250..	I		23		B					G	52		1	1	40		
254..	I		29		A				Y	G	52		1	1	50		
255..	I									F	52		1	1	35		
256..	O		1	Y	G	Y			Y	G	52				10		
257..	I		1		T					G	52			1	4		
258..	O				A				Y	G	10				10		
259..	I		2	Y	B	Y			Y	G	50	N	2		45		
260..	I									F	48		1				2
261..	I		1	Y	D	Y				G							
262..	I						Y			G	52	N	1	1	10		
263..	I		1	Y	D	Y		Y		G	50		1	1	40		
264..	I		1		D				Y	G	52			1	10		
265..										G	52		1	1	50		
266..	S		8	Y	G	Y			Y	G	50		8	2	650		250
267..	O		1		B					G	52		1	1	45		
268..	O		1		D				Y	G	50	N					
269..	I		1		A					G	52			1	50		
270..	O		1		S					G	50		2	1	125		
271..	I		1		S					G	49			3	6		
272..	I									F	8		1	1	30		
273..	I							Y	Y	G	52			2			24
274..	O		1	Y	D	Y				G	52						
275..	O		1		D				Y	G	44		1	1	60		
276..	I	N					Y			F	47	N	1		60		
277..											26		1	1	50		
278..	I	N								G	26						
279..	I						Y			G	52						
280..	O						Y	Y		G	52		8	3	400		
281..	I								Y	F	26		1	1	40		
282..	S									G	52		2	1	200		
283..	I									G	52		1	2	250		
284..	I									G	52						
285..	I									G	52						
286..	I		1		B	Y				G	52						
287..	I		1		B		Y	Y		G	52						
288..	I		1		D					G	52		1	1	30		
289..	I									G	52		6	2	100		
290..	O		1	Y	B	Y		Y		G	52		2	1	15		
291..	I		1		T					G	51		1	1	70		
292..	S									G	52		1	1	70		
293..	I									G	52		1	1	30		
294..	I								Y	G	52						
295..	I		4	Y	G	Y	Y			G	52	1	2	1	75		
296..	I		1		G	Y	Y			G	52	N		1	75		
297..	I		1		G	Y	Y		Y	F	52		3	1	125		
298..	I									G	52						
299..	I		1	Y	A	Y	Y		Y	F	52	3	1	1	30		
300..	O		1		T					G	52	N	1	1	35		

MILWAUKEE,

Running number.	BUILDINGS.		PLANT.		HOURS PER WEEK.		EMPLOYEES.					Number of fire escapes.	STAIRWAYS.				
	1 to 2 stories.	3 or more stories.	Owned or leased.	Running or idle.	When running full time.	Date of inspection.	Full capacity.	Date of Inspection.					Outside.	Inside.	Openings guarded.	Have hand rails.	
								Males.	Female.	Total.	Between 14 and 18 years.						Under 14 years.
301..	P	1	L	R	60	48	6	2	7	2	2	..	..	1	2	Y	Y
302..	1	1	L	..	60	60	10	7	..	7	..	..	..	..	..	..	..
303..	2	1	L	..	60	48	80	30	..	30	4	..	..	5	..	..	..
304..	P	1	L	..	60	48	7	4	..	4	..	..	..	1	..	..	..
305..	P	1	L	..	60	48	24	11	2	13	2	..	1	1	..	..	..
306..	1	1	O	..	60	48	100	20	..	20	..	..	..	1	..	..	..
307..	1	1	O	..	54	48	15	8	..	8	..	..	..	..	..	..	..
308..	3	1	O	..	60	60	6	6	..	6	..	..	..	2	..	..	..
309..	P	1	O	..	60	48	20	15	..	15	..	..	..	..	..	..	..
310..	1	1	L	..	54	54	100	24	60	84	11	..	1	1	Y	Y	..
311..	1	1	O	..	60	60	65	40	..	40	6	..	2	1	..	..	..
312..	P	1	O	..	60	60	6	4	..	4	..	..	..	..	..	..	..
313..	2	2	O	..	60	48	115	90	..	90	2	..	2	1	Y	Y	..
314..	2	2	O	..	60	48	150	34	..	34	..	..	2	2	..	..	..
315..	2	1	O	..	60	60	300	165	95	260	85	..	2	2	..	..	..
316..	1	1	L	..	60	60	100	7	5	12	3	..	..	2	..	..	..
317..	3	2	O	..	60	60	225	212	3	215	31	..	2	2	..	..	..
318..	3	3	O	..	60	60	20	12	..	12	..	..	..	1	..	..	..
319..	3	3	O	..	60	48	250	97	31	128	93	..	3	1	5	..	..
320..	1	3	O	..	60	60	300	3.0	..	300	85	..	1	2	..	..	..
321..	P	1	O	..	60	60	15	15	..	15	1	..	..	1	..	..	..
322..	1	1	O	..	60	60	8	5	..	5	..	..	..	..	..	..	..
323..	P	1	L	..	60	60	8	1	5	6	1	..	..	..	..	..	..
324..	1	1	L	..	60	48	20	11	..	11	..	..	..	..	..	..	..
325..	P	1	L	..	59	59	35	15	..	15	2	..	1	1	Y	Y	..
326..	1	1	O	..	60	60	10	6	..	6	..	..	..	2	..	..	..
327..	P	1	L	..	60	48	36	17	19	36	25	..	1	1	..	..	..
328..	9	5	O	..	60	60	100	100	..	100	..	..	1	4	..	..	..
329..	4	..	O	..	60	60	35	24	7	31	8	..	..	1	..	..	..
330..	1	..	O	..	60	36	80	30	50	80	35	..	..	..	..	..	..
331..	..	1	L	R	60	60	35	14	5	19	4	..	1	1	Y	Y	..
332..	P	1	O	..	59	59	90	30	60	90	31	..	2	2	..	..	..
333..	3	..	L	..	60	60	40	45	..	45	2	..	..	..	..	..	..
334..	6	..	O	..	60	60	150	85	..	85	1	..	..	2	Y	Y	..
335..	5	..	L	..	54	54	30	25	..	25	..	..	..	2	..	..	..
336..	4	..	O	..	60	54	190	40	..	40	4	..	..	..	..	..	..
337..	P	1	L	..	60	54	4	40	..	40	2	..	1	2	Y	Y	..
338..	3	1	O	..	60	60	27	27	..	27	2	..	..	3	..	..	..
339..	1	1	O	..	60	60	65	57	8	65	2	..	1	1	..	..	..
340..	1	3	O	..	60	48	75	18	..	18	..	..	..	2	..	..	..
341..	2	1	O	..	60	60	125	107	..	107	..	..	..	2	Y	Y	..
342..	4	1	L	..	48	48	200	125	..	125	10	..	3	..	..	..	..
343..	P	1	L	..	60	60	6	6	..	6	..	..	..	1	..	..	..
344..	8	..	O	..	60	60	294	100	..	100	..	..	3	4	..	..	..
345..	5	..	O	..	60	60	180	40	..	40	..	..	..	1	..	..	..
346..	..	1	O	..	60	60	53	53	..	53	..	..	2	1	..	..	..
347..	1	..	O	..	60	60	14	14	..	14	..	..	..	1	..	..	..
348..	2	..	L	..	60	60	125	65	..	65	6	..	..	1	..	..	..
349..	2	..	O	..	60	60	40	25	..	25	3	..	..	..	..	..	..
350..	P	1	L	..	48	48	5	3	..	3	..	..	..	1	Y	Y	..

MILWAUKEE COUNTY,—Continued.

Running number	DOORS.		ELEVATORS.			Machinery vats and pan guarded.	CLOSETS.		Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER.			
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.		Openings guarded.	Properly provided.						Screened.	Steam.	Water.	Electric, Gas.
301.	I	N				Y	Y	G	26	N							
302.	S							G	52			1	1	25			
303.	I		1	Y	B	Y		G	52	N		1	1	25			
304.	I								52								
305.	I		1	Y	D	Y		Y	52			1	1	15			2
306.	I								52			1	1	35			
307.	S								40								
308.	O		1	Y	B	Y			52			1	1	20			
309.	I							Y	50			1	1	35			
310.	I		1	Y	S	Y			52								
311.	I		2		B		Y		52			2	2	75			
312.	I								52								
313.	I		1	Y	D	Y	Y	Y	42			2	1	85			
314.	I	Y	2		D				52			2	1	85			
315.	O	N	1		T			Y	42			2	1	80			
316.	O		1		S				G			1	1	75			
317.	I		1		S				48	N		2	1	75			
318.	S											1	1	30			
319.	I		2	Y	D	Y	N	Y	52			1	1	150			
320.	I		1		S			Y	4		2	2	1	150			
321.	I								52	N		1	1	8			
322.									26								
323.							Y	Y	52	N		1	1	10			
324.	S	N							52			1	1	12			
325.	O		1	Y	D	Y		Y	52			3	9				
326.	I								52								
327.	O	N	1	Y	T	Y	Y	Y	G					4			
328.	I		1		G				52			5	2	100			
329.	I								52				1	45			
330.	S							Y	52	N		2	2	21			
331.	O	N	1	Y	B	Y	Y	Y	F	52	N	1	1	10			
332.			1		A				G	52				6			
333.	I								26		2	1	200				
334.	S	N						Y	52	N		2	1	130			80
335.	I								52			1	2	37			
336.	S								G	52		1	1	100			
337.	I		1	Y	G	Y		Y	52					10			
338.	I		1		D				52			2	1	80			
339.	I		1		B			Y	52			1	1	50			
340.									40			2	2	300			
341.	I	N							F	40		4	3	500			
342.	I		2	Y	G	Y		Y	G	40		2	1	125			
343.	O								G	52		2	2	22			
344.	O							Y	G	52		4	6	15			
345.									G	52	1	2	3	200			
346.	I								G	52	2	18	14	925			
347.	I								G	52	N	4	6	2000			
348.	S		1	Y	D	Y			16			1	1	50			
349.	I								G	52		1	1	150			
350.	I								G	50				2			

MILWAUKEE,

Running number.	BUILDINGS.		PLANT.	Running or idle.	HOURS PER WEEK.		EMPLOYEES.						STAIRWAYS.					
	1 to 2 stories.	3 or more stories.			Owned or leased.	When running full time.	Date of inspection.	Full capacity.	Date of Inspection.					Number of fire escapes.	Outside.	Inside.	Openings guarded.	Have hand rails.
									Male	Female.	Total.	Between 14 and 18 years.	Under 14 years					
351..	9	1	O	R	60	60	125	125	125					2	4	Y	Y	
352..	2	7	O		60	48	20	5	5				1	1				
353..	2	1	O		60	60	500	490	460	18			3	1	6			
354..	2	1	O		60	48	100	12	12	1				1	1	Y	Y	
355..	4		O		60	60	22	22	22				1	1				
356..		1	L		49	49	100	80	80	12			2		1			
357..	2	2	O		60	60	105	105	105				3	1	3			
358..	2	1	O		60	60	175	151	151	11					1			
359..	2	1	O		54	54	60	25	25	2								
360..		1	L		60	60	45	28	28	1				2	Y	Y		
361..	P	1	L		60	60	75	12	46	58	32	2	1		1			
362..		1	L		60	60	15	6	4	10					1			
363..	1	1	L		59	59	9	9		9	1			1				
364..	2	1	L		45	45	40	11	23	34				2				
365..	P	1	L		60	48	45	5		5			2		2			
366..	1	1	O		60	48	100	5		5					1			
367..	1	1	O		60	60	40	26		26					1	Y	Y	
368..	1	1	O		60	60	49	49		49				1	2			
369..	P	1	L		40	40	5	5		3				1				
370..	3		L		60	60	60	25	2	27	7				2			
371..	P	1	L		60	60							1					
372..	P	1	L		60	48	16	8		8	1		1		1			
373..	2	1	O		60	60	11	11		11	1			1	1			
374..	3	1	O		60	60	30	8	4	12					1			
375..	4		O		60	44	100	77	75	152	58				2			
376..		P	L		60	60	30	5	22	27	5		2		1			
377..	P	1	L		54	54	8	8		8	2							
378..	1	1	L		60	60	25	18		18	6			1	2			
379..		1	L		60	60	18	18		18					1			
380..	1	1	L		60	60	8	6		6					1			
381..	2	1	O		60	60	12	5		5				1	1			
382..	2	1	O		60	60	169	139	30	169	39	1	1	1	1			
383..	P	1	L		59	59	10	10		10					1			
384..	P	1	L		50	50	15	5	10	15				2				
385..	P	4	L		60	60	35	15		15				1	Y	Y		
386..		1	L	R	60	60	25	16	3	19	2				2	Y	Y	
387..	8	P	L		60	30	30	30		30			1	4				
388..	2	1	L		60	60	22	13		13	5							
389..		1	L		60	60	140	60	80	140	16		2		1	Y	Y	
390..	3	2	L		58	50	400	60	240	300	125		1		2			
391..	2	1	L		60	48	30	20		20	3			3	2			
392..		1	L		60	60	350	75	200	275	45		3		3			
393..	P	1	L		60	60	18	3	15	18				1	1			
394..	1	1	O		48	48	28	28		28					1			
395..		1	L		54	54	30	18	12	30	6		1		1			
396..	2	2	L		60	60	150	150		150	3		1		2			
397..	P	1	O		60	60	5	2		2								
398..	1	1	O		60	60	19	10		10	1				1	Y	Y	
399..	2	1	O		60	54	105	40		40	2		1		2			
400..	1	1	O		60	60	18	3	10	13				1	1			

MILWAUKEE COUNTY,—Continued.

Running number.	DOORS.		ELEVATORS.				Machinery vats and pan guarded.	CLOSETS.			Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER.		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.		Properly provided.	Screened.	Steam.						Water.	Electric, Gas	
351.	O	N	2	Y	B	Y	Y	Y	.....	F	52	N	6	5	365	.....	.....
352.	O	..	1	..	A	..	..	..	.....	F	42	..	1	1	35	.....	.....
353.	O	..	2	..	A	..	..	..	.....	G	52	..	4	2	200	.....	.....
354.	O	..	..	..	..	..	..	..	.....	G	52	N ¹	1	1	30	.....	.....
355.	I	..	..	..	..	..	..	..	.....	F	36	..	2	1	100	.....	.....
356.	O	..	1	Y	B	Y	..	Y	.....	G	52	..	2	1	85	.....	.....
357.	O	..	..	..	..	..	..	..	.....	G	40	..	2	1	212	.....	.....
358.	S	N	..	..	..	..	..	..	.....	G	12	..	1	1	60	.....	.....
359.	I	..	1	Y	B	Y	..	Y	.....	G	50	..	1	1	15	.....	.....
360.	I	..	1	Y	B	Y	..	Y	.....	G	52	..	2	2	35	.....	.....
361.	I	..	2	..	D	..	..	..	Y	G	52	..	..	1	10	.....	.....
362.	I	..	1	..	A	..	..	..	Y	F	5	..	1	1	10	.....	.....
363.	I	..	..	..	..	..	..	..	.....	G	52	..	..	..	..	.....	.....
364.	I	..	..	..	..	..	..	..	Y	G	48	..	..	1	4	.....	.....
365.	O	..	1	Y	D	Y	..	Y	Y	G	25	..	..	..	..	.....	.....
366.	S	..	..	..	..	..	..	N	.....	G	52	..	1	1	10	.....	.....
367.	S	..	1	Y	B	Y	..	Y	.....	G	52	..	..	2	..	.....	50
368.	S	..	1	..	T	..	..	..	.....	G	52	..	3	1	35	.....	.....
369.	O	..	..	..	..	..	..	..	Y	G	52	..	..	..	..	.....	.....
370.	I	..	1	Y	A	Y	Y	..	..	G	51	..	1	1	50	.....	.....
371.	I	..	1	..	D	..	..	..	..	G	52	..	..	..	..	.....	.....
372.	I	..	1	..	D	..	Y	..	..	F	46	..	1	1	7	.....	.....
373.	O	..	1	..	D	..	..	..	..	G	52	..	1	1	30	.....	.....
374.	O	N	..	..	..	..	..	..	Y	G	..	..	2	2	100	.....	.....
375.	I	..	2	Y	B	Y	..	..	..	G	46	..	2	1	125	.....	.....
376.	I	..	1	..	G	..	..	..	..	G	52	..	1	1	10	.....	.....
377.	I	..	..	..	..	..	..	..	..	G	20	..	..	..	5	.....	.....
378.	I	..	..	..	..	..	..	..	..	G	52	..	1	1	20	.....	.....
379.	I	..	..	..	..	..	..	N	.....	G	52	..	2	1	35	.....	.....
380.	O	..	1	Y	B	Y	..	Y	.....	G	52	..	..	..	..	.....	.....
381.	I	..	..	..	..	..	..	..	..	G	43	..	..	..	..	.....	.....
382.	S	..	1	Y	G	Y	Y	Y	Y	G	50	..	3	1	150	.....	.....
383.	I	..	..	..	..	..	..	..	Y	G	52	..	1	1	25	.....	.....
384.	..	..	..	..	..	..	..	..	Y	G	52	..	1	1	15	.....	.....
385.	I	N	..	..	..	..	..	..	..	G	16	..	1	1	50	.....	.....
386.	O	N	1	Y	G	Y	Y	Y	Y	G	52	N	1	1	10	.....	.....
387.	I	..	1	..	B	..	..	..	..	F	52	..	7	3	200	.....	.....
388.	I	..	..	..	..	..	..	..	..	G	44	..	1	1	50	.....	.....
389.	O	..	1	Y	G	Y	..	Y	Y	G	52	..	1	1	75	.....	.....
390.	I	..	3	..	B	..	..	..	..	G	52	..	3	2	100	.....	.....
391.	O	..	2	..	B	..	..	..	..	G	41	..	..	..	..	.....	.....
392.	O	..	2	..	A	..	..	..	..	G	52	N	3	1	80	.....	.....
393.	O	..	..	..	..	..	..	..	..	G	52	..	1	1	15	.....	.....
394.	I	..	1	Y	D	..	..	..	..	G	52	..	1	1	12	.....	.....
395.	I	..	1	..	A	..	..	..	Y	G	52	..	..	1	..	25	.....
396.	I	..	1	..	B	..	..	..	..	G	52	..	1	1	75	.....	.....
397.	I	..	..	..	..	..	..	..	..	G	38	..	..	..	..	.....	.....
398.	I	..	1	Y	..	..	..	..	..	G	52	N	..	..	..	.....	.....
399.	I	..	1	..	D	Y	Y	..	..	G	48	..	3	2	125	.....	.....
400.	I	..	1	..	..	..	..	..	Y	G	52	..	1	1	25	.....	.....

MILWAUKEE,

Running number.	BUILDINGS.		PLANT.		HOURS PER WEEK.		EMPLOYEES.					STAIRWAYS.					
	1 to 2 stories.	3 or more stories.	Owned or leased.	Running or idle.	When running full time.	Date of inspection.	Full capacity.	Date of Inspection.					Number of fire escapes.	Outside.	Inside.	Openings guarded.	Have hand rails.
								Male	Female.	Total.	Between 14 and 18 years.	Under 14 years					
401..			9	O	R	60	60	500	300		300	36			3	Y	Y
402..			1	O	O	60	60	8	5		5				1		Y
403..			2	O	I	60	60	36	1		1						Y
404..	3		5	O	R	60	48	450	150	200	350	24		4	2	3	Y
405..			3	O	O	60	60	35	35		35						Y
406..			2	O	O	60	60	18	9		9	3			1		
407..			1	L	O	60	60	15	6		6				1		
408..			1	O	O	60	60	14	2	5	7		2				
409..			1	O	O	60	46	6	6		6						
410..	1		1	O	O	54	54	525	195	230	425	189		2		3	Y
411..	11	19		O	O	60	60	790	767		767		19		21		
412..		P 1		L	O	60	60	5	3	2	5	2					
413..	1			L	O	60	48	10	7		7				1		
414..	1			L	L	60	60	9	6		6		1		1		
415..		P 1		L	L	60	48	37	8	19	24			1	1		
416..			1	L	L	54	54	20	10	2	12	1			1		
417..			1	L	O	60	60	45	40		40	3	1	1	1		
418..	3		2	O	L	60	60	130	70		70	10		1	2		
419..	P 1			L	L	60	54	18	1	4	5			1	1		
420..		P 1		L	L	60	60	19	2	10	12				1		
421..		P 1		L	L	60	60	50	5	20	25	1			1		
422..	P 1			L	L	60	54	30		15	15	4					
423..	P 1			O	O	60	60	10	7		7	2					
424..	1			O	L	60	60	5	5		5						
425..	P 1			L	L	60	54	10	6		6				1	Y	Y
426..			1	O	O	60	60	40	10	15	25	15			1		
427..	1		7	O	O	60	60	683	680	3	683	18		10		8	
428..	8		8	O	O	60	60	90	90	1	91			1	4		
429..	7			O	O	60	60	108	92		92			1	4		
430..	3		1	O	O	60	60	276	38		38		2		1		
431..				O	O	60	60	100	90		90				1		
432..	3			O	I	60	N	8			N				2		
433..	1			L	L	54	54	200	6	194	200	65			1		
434..	2			O	O	60	48	10	9		9				1		
435..	1		1	O	O	60	60	31	9	22	31	7			1		
436..	6		8	O	O	60	30	550	325		325		3	4	15		
437..	1			L	L	60	60	8	4		4						
438..	1			I	R	60	60	10	2	6	8						
439..	2			O	O	60	60	160	115		115	8			2	Y	Y
440..	2			L	L	60	60	45	25		25			1	1		Y
441..			1	L	R	60	60	65	22	1	23	1	N		1	Y	Y
442..	4		1	O	O	60	60	25	25		25	2			3		
443..	P 1			L	L	60	54	10	4		4				1		
444..			1	L	L	59	59	25	17	8	25	8		1	1		
445..		P 1		L	L	59	59	15	15		15	N		1	1	Y	Y
446..	1			O	O	60	60	8	5		5			1	1		
447..	4			O	O	60	48	35	20		20	11			1	3	
448..			1	L	O	60	48	70	28	14	42	7			1	1	
449..	2			O	O	60	60	10	8		8				1	1	N
450..	1			O	O	60	60	7	4		4	2			1	1	Y

MILWAUKEE COUNTY,—Continued.

Running number.	DOORS.		ELEVATORS.				Machinery vats and pan guarded.	CLOSETS.		Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER.		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.		Properly provided.	Screened.						Steam.	Water.	Electric, Gas.
401..	I	N	2	Y	A	Y	Y	Y	...	G	50	N	3	1	75	...	
402..	I	..	..	..	..	..	..	..	...	G	52	N	2	1	200	...
403..	I	..	..	..	..	..	..	..	...	G	52	N	1	1	25	...
404..	O	..	3	Y	G	Y	..	..	Y	G	52	N	4	1	125	...
405..	O	..	..	..	..	..	..	..	..	G	50	..	1	1	35	...
406..	I	..	..	..	..	..	..	..	...	G	52	..	1	..	..	...
407..	I	..	1	Y	D	Y	Y	Y	...	G	52	..	1	1	6	...	
408..	I	..	..	..	..	..	..	..	Y	G	52	..	1	1	25	...
409..	S	..	..	..	..	..	..	..	Y	G	52	N	..	..	80	...
410..	O	..	6	Y	G	Y	..	Y	Y	G	52	N	..	..	..	...
411..	O	..	9	..	D	..	..	..	..	G	52	..	27	11	2720	...
412..	I	..	1	..	B	..	..	..	Y	G	..	..	1	1	40	...
413..	S	..	..	..	..	..	..	..	..	G	..	..	1	1	100	...
414..	I	..	..	..	..	..	..	Y	..	G	52	..	1	1	25	...
415..	I	..	..	..	..	..	..	..	Y	G	52	..	1	1	25	...
416..	I	..	1	Y	B	Y	..	..	..	G	52	..	..	..	..	...
417..	O	..	1	..	G	..	..	..	..	G	52	..	2	1	60	...
418..	S	..	1	..	B	..	..	..	..	G	50	N	1	1	75	...
419..	I	..	..	..	..	..	..	..	Y	G	52	..	..	..	..	...
420..	I	..	..	..	..	..	Y	..	..	G	52	..	1	1	35	...
421..	I	..	..	..	..	..	..	..	..	G	10	..	1	1	25	...
422..	I	..	..	..	..	..	..	..	..	G	52	..	..	1	6	...
423..	I	..	..	..	..	..	..	..	..	G	52	..	..	..	..	...
424..	I	..	..	..	..	..	Y	..	..	G	52	N	..	1	6	...
425..	I	..	..	..	..	..	..	..	..	G	40	..	1	1	20	...
426..	I	..	1	Y	B	Y	..	..	Y	G	52	..	1	1	20	...
427..	O	..	7	..	B	..	..	..	..	F	52	1	6	3	..	555
428..	S	..	1	..	G	..	..	..	..	F	52	N	3	2	90	...
429..	S	..	1	..	B	..	..	..	..	F	52	..	5	2	175	...
430..	O	..	1	..	B	..	Y	Y	..	G	52	..	10	..	160	...	
431..	I	..	..	..	..	..	..	..	..	G	52	N	4	9	500	...
432..	I	..	..	..	..	..	..	..	..	G	..	..	1	1	38	...
433..	O	..	1	Y	D	Y	..	Y	Y	G	48	..	1	1	35	...	
434..	I	..	..	..	..	..	..	..	..	G	52	..	..	..	6	...
435..	I	..	1	..	D	Y	..	..	Y	G	52	..	1	1	10	...
436..	O	..	9	..	B	..	..	..	..	F	52	..	9	8	390	...
437..	S	..	..	..	..	..	..	..	..	G	52	..	..	1	2	...
438..	S	..	..	..	..	..	..	Y	Y	G	N	..	1	1	3	...
439..	O	..	1	Y	D	Y	..	..	..	G	51	..	..	..	..	...
440..	O	..	..	..	..	..	..	..	..	G	52	..	1	1	40	...
441..	I	N	1	Y	D	Y	Y	N	N	G	52	N	..	..	40	...
442..	O	..	..	..	..	..	..	N	..	G	52	..	1	1	75	...
443..	I	..	1	Y	D	Y	..	..	..	G	52	..	..	..	..	...
444..	O	..	..	..	..	..	..	..	N	G	52	..	..	1	..	...
445..	O	..	1	Y	D	..	..	..	..	G	52	N	..	1	..	3
446..	O	..	..	..	..	..	..	..	..	G	52	..	..	..	..	5
447..	S	..	..	..	..	..	Y	Y	..	G	52	..	1	1	25	...
448..	I	..	1	Y	B	Y	..	..	N	G	52	..	..	1	..	...
449..	I	N	..	..	..	..	..	..	..	F	52	..	1	1	22	...
450..	I	..	..	..	..	..	..	..	..	G	50	..	..	..	..	...

MILWAUKEE,

Running number.	BUILDINGS.		PLANT.		HOURS PER WEEK.		EMPLOYEES.						STAIRWAYS.				
	1 to 2 stories.	3 or more stories.	Owned or leased.	Running or idle.	When running full time.	Date of inspection.	Full capacity.	Date of Inspection.					Number of fire escapes.	Outside.	Inside.	Openings guarded.	Have hand rails.
								Males.	Female.	Total.	Between 14 and 18 years.	Under 14 years.					
451..	1		O	R	60	60	19	10		10							
452..		P	L		60	60	14	2	10	12				1			
453..			O		60	60	25	25		25	N			1			
454..			L		54	54	150	8	93	101	12		2	1			
455..		P	L		48	48	125	85	40	125	26		2				
456..	4		O		60	60	100	90		90							
457..		1	O		57	57	25	18	7	25	2		1				
458..	2		O	I	60	N	5										
459..		P	L	R	60	54	60	15	15	30	14		2		1	Y	Y
460..	1	1	O		60	60	28	9		9					2		
461..		P	O		59	59	96	96		96			2		2		
462..	1	3	O		60	48	450	130		130	21				6		
463..	1	P	L		48	48	35	9		9	9			1	1		
464..		2	O		60	48	500	300	5	305	52		4		4	Y	Y
465..	2		L		60	60	15	7		7					1		
466..	3		O		60	48	35	5	2	7	2				3		
467..	1		O		60	60	10	2	6	8					1		
468..		1	O		60	60	125	90	10	100	11		2		2		
469..	4		O		60	60	35	95		95					1		
470..	P	1	L		60	60	20	3	9	12	2			2	1		
471..	1		O		60	60	6	6		6					1		
472..	P	1	L		60	60	8	2	3		2						
473..	1	2	O	I	60		59	4	4	5			4		2	Y	Y
474..	P	1	L	R	60	48	10	4	1	4	3						
475..	1		L		59	59	14	13	1	14	1				1	Y	Y
476..	P	1	L		48	48	8	7		7			1				
477..	1		O		60	60	20	16		16	1						
478..	2		O		60	60	22	15		15					1		
479..	2		O		60	30	6	1		1					1		
480..	11	10	O		60	60	500	400		400			7		18		
481..	3		O		60	60	300	151	85	236	61						
482..	1		L		60	60	5	4		4	1				2	Y	Y
483..	P	1	L		60	60	15	6		5	1				1		
484..	2		O		60	60	45	40		40					1		
485..	1	1	O		54	54	12	7		7					1	Y	Y
486..	1		O		60	60	8	3		3				1	1		
487..	1	2	O		60	60	20	4		4	2			1	1		
488..	1	1	O		60	60	140	90	40	130	18		2		1		
489..	P	1	L		60	60	12	6		6					1		
490..	3		O		60	60	35	32		32					1		
491..	1	3	L		60	48	180	95		95	2				4		
492..		1	L		54	54	38	30		30	6				1		
493..	2		O		60	36	5	2		2					1		
494..	1		O		48	48	35	11	12	23	6				2		
495..	3		L		60	60	20	15		15	2			1	1		
496..		1	O	R	54	48	120	30	83	113	77	N	2		2	Y	Y
497..		P	L		60	60	50	4	56	60	5				1		
498..		1	O		60	60	35	35		35		N	1		1		
499..	2	P	L		60	54	45	14		14			2		3		
500..	2	2	O		60	60	45	35		35				1	1		

MILWAUKEE COUNTY,—Continued.

Running number.	DOORS.		ELEVATORS.				CLOSETS.		Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER.			
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.	Machinery vats and pan guarded.	Properly provided.						Screened.	Steam.	Water.	Electric, Gas.
451..	I	..	..	..	..	..	..	..	G	52	..	..	..	..	..	..	..
452..	I	..	..	..	..	..	..	..	G	52	..	..	..	..	..	..	..
453..	I	..	1	Y	B	Y	..	..	G	40	..	..	1	10	..	..	..
454..	O	..	..	..	B	..	..	..	G	50	..	..	1	300	..	..	..
455..	I	..	1	..	G	..	..	..	G	45	..	..	1	75	..	..	..
456..	I	..	1	..	B	..	..	..	F	52	N	1	1	30	..	..	..
457..	I	..	1	..	B	..	..	..	F	46	..	..	..	..	..	..	..
458..	O	..	1	..	..	..	..	..	F	..	..	1	1	25	..	..	..
459..	O	..	1	..	D	Y	..	Y	F	52	..	..	1	12	..	..	..
460..	I	..	..	..	..	..	..	..	G	52	..	..	..	..	..	..	..
461..	O	..	1	Y	A	Y	Y	..	G	52	..	2	1	135	..	..	..
462..	O	..	3	..	G	..	..	..	G	34	..	6	1	600	..	..	..
463..	I	..	2	Y	G	Y	Y	Y	G	52	..	..	1	30	..	..	..
464..	I	N	..	..	..	..	..	..	G	52	..	..	1	4	..	..	..
465..	I	..	1	..	D	Y	..	Y	F	52	..	2	1	70	..	..	..
466..	I	..	1	..	B	Y	..	..	G	52	..	1	1	24	..	..	..
467..	I	..	1	Y	B	Y	..	..	G	48	..	1	1	75	..	..	..
468..	I	..	1	..	B	..	..	..	F	48	..	1	1	50	..	..	..
469..	S	..	1	..	..	..	..	..	F	52	..	1	1	20	..	..	..
470..	I	..	..	..	..	..	..	..	Y	..	..	..	..	..	..	..	..
471..	I	..	1	Y	B	Y	..	..	G	52	..	1	1	25	..	..	..
472..	I	..	..	..	..	..	..	..	G	62	..	..	..	..	..	..	..
473..	I	..	1	Y	..	..	..	N	G	..	..	4	2	750	..	..	..
474..	I	..	1	Y	D	Y	..	..	G	52	N	1	1	15	..	..	..
475..	I	..	1	Y	G	Y	Y	..	G	52	..	1	1	7	..	..	..
476..	O	..	..	..	..	..	..	..	G	52	..	..	..	..	..	..	..
477..	I	..	1	Y	D	Y	..	..	G	..	..	..	..	..	..	..	..
478..	I	..	..	..	..	..	..	..	G	52	N	..	..	..	..	..	..
479..	I	..	..	..	..	..	..	..	G	16	..	..	..	..	..	..	..
480..	O	..	4	..	A	Y	Y	Y	G	52	N	15	6	1000	..	..	..
481..	O	..	..	..	..	..	..	..	G	52	..	2	1	48	..	..	..
482..	I	..	1	Y	B	Y	..	..	G	52	..	..	..	..	..	..	..
483..	I	..	..	..	..	..	Y	..	G	26	..	1	1	20	..	..	..
484..	I	..	..	..	..	..	..	..	G	47	..	2	1	80	..	..	..
485..	I	..	..	..	..	..	..	Y	G	52	..	..	..	..	..	..	..
486..	I	..	..	..	..	..	Y	..	G	52	..	..	1	7	..	..	..
487..	O	..	..	..	..	..	..	..	F	26	..	1	1	20	..	..	..
488..	O	..	2	Y	D	Y	Y	..	G	45	..	2	1	50	..	..	..
489..	O	..	..	..	..	..	..	..	G	52	..	1	1	15	..	..	..
490..	O	..	..	..	..	..	..	..	G	52	..	3	1	300	..	..	..
491..	S	..	2	Y	D	Y	..	Y	G	51	..	1	1	35	..	..	..
492..	I	..	..	..	..	..	..	..	G	52	..	..	1	3	..	..	..
493..	I	..	..	..	..	..	..	..	G	12	..	..	1	3	..	..	..
494..	O	..	1	Y	D	Y	..	Y	G	52	N	1	1	30	..	..	..
495..	O	..	..	..	..	..	..	..	G	52	..	1	1	80	..	..	..
496..	O	N	2	Y	D	Y	Y	Y	G	52	N	2	1	75	..	..	..
497..	O	..	2	..	B	..	..	..	G	8	..	..	..	..	..	..	..
498..	O	..	1	..	D	..	..	..	G	52	..	..	1	20	..	..	..
499..	S	N	..	..	..	..	..	..	F	..	N	1	1	65	..	..	..
500..	S	..	..	..	..	..	..	..	G	52	..	3	2	63	..	..	..

MILWAUKEE,

Running number.	BUILDINGS.		PLANT.	HOURS PER WEEK.	EMPLOYEES.						STAIRWAYS.							
	1 to 2 stories.	3 or more stories.			Owned or leased.	Running or idle.	When running full time.	Date of inspection.	Date of Inspection.				Number of fire escapes.	Outside.	Inside.	Openings guarded.	Have hand rails.	
									Full capacity.	Male.		Female.						Total.	Between 14 and 18 years.	Under 14 years.
501..					48	48	20	20	..	..	..	1	..	1	..	Y	Y
502..	P	2	1	L	60	60	60	50	..	..	..	..	..	2	2	..	..
503..		1	..	O	60	60	60	6	..	..	..	..	..	1	..	..	..
504..		P	1	O	59	59	47	30	17	..	..	..	..	2	..	..	..
505..			1	O	60	60	70	68	2	..	..	..	..	1	..	..	..
506..			1	O	60	60	36	36	..	..	..	..	..	1	..	..	..
507..			1	O	59	36	12	12	..	..	..	..	..	..	..	..	..
508..		3	..	O	60	60	45	25	..	..	..	..	..	..	2	..	..
509..	P	2	..	O	60	60	32	18	..	..	..	..	..	..	1	..	..
510..		3	..	O	60	60	45	22	..	..	..	..	..	..	1	..	..
511..			1	L	60	60	125	10	15	..	..	1	..	1	..	..	..
512..			1	L	60	60	16	16	..	..	..	..	..	1	..	..	..
513..	P	1	..	L	60	60	35	13	..	..	..	..	..	1	..	..	..
514..		1	..	O	60	60	9	6	..	..	..	..	..	1	..	..	..
515..		2	..	O	60	60	8	8	..	..	..	2	..	6	..	..	..
516..			1	L	60	60	65	55	10	..	65	2	N	1	..	1	..	
517..	P	2	1	L	60	60	80	30	1	..	31	..	..	2	..	3	..
518..		3	4	L	60	60	350	250	..	..	250	45	..	4	..	4	..
519..		P	1	L	60	60	18	16	..	..	16	1	..	1	..	1	..
520..		P	1	L	60	60	17	14	..	..	14	..	..	1	..	1	..
521..			1	I	60	60	17	12	..	..	12	1	..	..	1	..	..
522..		1	..	O	60	50	48	24	..	..	24	1	N	..	..	..	..
523..			1	L	60	30	15	12	3	..	15	4	..	..	1	Y	Y
524..		2	..	O	60	60	63	63	..	..	63	2	..	..	1	..	..
525..		1	..	L	60	60	8	6	..	..	6	..	..	..	1	..	..
526..		P	1	L	60	48	14	5	4	..	9	3	..	1	1	..	..
527..		2	..	O	60	60	16	2	8	..	10	4	..	..	1	..	..
528..		3	..	O	60	N	12	1	..	..	1	..	..	..	2	..	..
529..		2	..	O	60	60	10	5	..	..	5	..	..	..	..	..	..
530..		P	1	L	59	59	23	19	3	..	13	..	..	1	..	Y	Y
531..		3	1	O	60	60	20	20	..	..	20	..	..	2	1	..	..
532..		1	..	O	48	48	12	7	..	..	7	2	..	..	1	..	..
533..	P	1	..	O	54	54	25	19	..	..	19	..	..	1	..	..	..
534..		2	..	O	60	60	35	17	..	..	17	..	..	..	2	..	..
535..		2	1	O	60	48	65	60	..	..	60	..	..	..	1	..	..
536..		1	..	L	60	60	10	5	..	..	5	..	..	..	1	..	..
537..		P	1	L	60	60	2	12	..	..	12	2	..	..	1	Y	Y
538..		3	..	O	60	60	16	9	..	..	9	..	..	..	1	..	..
539..		5	..	O	60	60	100	75	..	..	75	6	..	2	1	..	..
540..		P	2	L	60	..	50	15	15	..	30	N	..	2	2	..	..
541..		1	..	O	60	48	15	10	..	..	10	..	..	..	..	..	..
542..		4	..	O	60	30	75	30	..	..	30	..	..	..	3	Y	Y
543..		P	1	O	60	48	31	2	..	..	2	..	..	..	1	..	..
544..		P	1	L	59	59	19	8	..	..	8	..	..	..	1	..	..
545..			1	L	60	48	40	20	..	..	20	3	..	1	1	..	..
546..	P	1	..	L	60	60	25	3	17	..	20	5	..	1	1	..	..
547..		P	1	L	60	60	40	30	10	..	40	19	..	1	1	..	..
548..			1	O	60	60	23	12	..	..	12	..	..	1	1	..	..
549..		3	..	O	60	54	80	40	..	..	40	..	..	..	1	..	..
550..	P	1	..	O	60	60	7	7	..	..	7	..	..	1	1	..	..

MILWAUKEE COUNTY,—Continued.

Running number	DOORS.		ELEVATORS				Machinery vats and pan guarded.	CLOSETS.		Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER.		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.		Properly provided.	Screened.						Steam.	Water.	Electric, Gas
501..	I	N	1	Y	D	Y	Y	Y	G	52	N	1	1	12			
502..	O		1	Y	D	Y	Y	Y	G	50		1	1	14			
503..	S		1	Y	A	Y	Y	Y	F	52		1	1	5			
504..	I		2	Y	G	Y	Y	Y	F	52		2	2	110		2 1/2	
505..	I		2	Y	G	Y	Y	Y	G	52		2	2	110		10	
506..	I		1	Y	B	Y	Y	Y	G	52							
507..	I		1	Y	D	Y	Y	Y	G	52							
508..	S		1	Y	D	Y	Y	Y	G	52							
509..	O		1	Y	B	Y	Y	Y	G	44		1	1	60			
510..	S		1	Y	D	Y	Y	Y	G	52		1	1	8			
511..	I		1	Y	D	Y	Y	Y	G	52	N	1	1	8		8	
512..	O		2	Y	D	Y	Y	Y	G	52		1	1	8			
513..	I		1	Y	D	Y	Y	Y	G	52		1	1	25			
514..	O		1	Y	D	Y	Y	Y	G	52	N	1	1	8			
515..	I		1	Y	D	Y	Y	Y	G	52		1	1	8			
516..	I		1	Y	A	Y	Y	Y	G	52		3	2	450			
517..	O		1	Y	D	Y	Y	Y	G	52							
518..	O		2	Y	G	Y	Y	Y	G	52		2	1	75			
519..	I		1	Y	G	Y	Y	Y	G	52		4	1	250			
520..	I		1	Y	D	Y	Y	Y	G	52		1	1	9			
521..	I		1	Y	D	Y	Y	Y	F	52		1	1	10			
522..	O		1	Y	D	Y	Y	Y	F	52		1	1	35			
523..	I		1	Y	S	Y	Y	Y	F	52		1	1	9			
524..	I		1	Y	B	Y	Y	Y	G	9		2	1	80			
525..	I		1	Y	B	Y	Y	Y	G	52		1	1	18			
526..	O		1	Y	A	Y	Y	Y	G	50							
527..	I		1	Y	B	Y	Y	Y	G	52		1	1	12			
528..	S		1	Y	B	Y	Y	Y	F	40		1	1	20			
529..	I		1	Y	B	Y	Y	Y	F	52		2	1	30			
530..	I		1	Y	B	Y	Y	Y	G	52						5	
531..	I		1	Y	B	Y	Y	Y	F	44		1	1	18			
532..	I		1	Y	B	Y	Y	Y	G	50		1	1	18			
533..	I		1	Y	B	Y	Y	Y	G	52		1	1	30			
534..	I		1	Y	B	Y	Y	Y	G	52	N	1	1	30			
535..	S		1	Y	B	Y	Y	Y	G	36 1/2		1	1	40			
536..	I		1	Y	D	Y	Y	Y	G	52							
537..	S	N	1	Y	D	Y	Y	Y	G	52		1	1	70		6	
538..	I		1	Y	B	Y	Y	Y	G	48		2	1	125			
539..	I		1	Y	B	Y	Y	Y	G	52		1	1	12			
540..	I		1	Y	D	Y	Y	Y	G	52							
541..	O	N	1	Y	D	Y	Y	Y	F	52		1	1	6			
542..	O		1	Y	D	Y	Y	Y	F	52		2	1	100			
543..	I		1	Y	D	Y	Y	Y	F	26							
544..	I		1	Y	S	Y	Y	Y	G	52							
545..	I		1	Y	S	Y	Y	Y	G	50						2	
546..	O		1	Y	S	Y	Y	Y	G	50		1	1	50			
547..	I		1	Y	S	Y	Y	Y	G	52							
548..	S		1	Y	S	Y	Y	Y	G	52		1	1	10			
549..	O		1	Y	B	Y	Y	Y	G	50		1	1	30			
550..	S		1	Y	B	Y	Y	Y	F	42		1	1	10			

MILWAUKEE,

Running number.	BUILDINGS.		PLANT.		HOURS PER WEEK.		EMPLOYEES.					Number of fire escapes.	STAIRWAYS.				
	1 to 2 stories.	3 or more stories.	Owned or leased.	Running or idle.	When running full time.	Date of inspection.	Full capacity.	Date of Inspection.					Outside.	Inside.	Openings guarded.	Have hand rails	
								Male	Female.	Total.	Between 14 and 18 years.						Under 14 years
551..	4	2	O	R	60	60	300	220	.....	220	7	2	3	Y	Y	
552..	3	2	O	..	60	60	125	110	.....	110	4	1	3	..	..
553..	1	1	O	..	60	60	60	8	4	.....	4	..	1	..	..
554..	2	1	O	..	60	60	18	18	.....	18	..	..	2	..	..
555..	6	1	O	..	60	60	115	115	.....	115	..	..	3	..	..
556..	P	1	L	..	60	60	7	7	.....	7	N	1	1	..	..
557..	..	..	L	..	60	60	15	15	.....	15	2	..	..	..	..
558..	1	..	L	..	60	60	15	15	.....	15	2	..	1	Y	Y	
559..	P	1	L	..	60	48	25	5	..	5	2	..	2	..	..
560..	2	2	O	..	60	60	400	18	382	400	104	N	1	..	..
561..	1	..	O	I	60	..	6	..	..	..	..	..	..	..	..
562..	P	1	L	R	60	60	65	34	26	60	3	1	1	Y	Y		
563..	..	..	L	..	60	60	5	3	..	3	1	..	1	..	..
564..	5	1	O	..	59	59	145	145	.....	145	..	..	2	..	..
565..	3	1	O	..	60	60	70	26	..	26	..	1	2	..	..
566..	P	2	L	..	60	60	5	2	..	2	1	..	1	..	..
567..	1	1	L	..	54	54	20	20	.....	20	..	..	2	..	..
568..	2	..	L	..	60	48	45	10	..	10	..	..	1	..	..
569..	1	..	O	..	60	60	8	4	..	4	..	1	1	..	..
570..	P	1	L	..	60	60	15	9	6	15	7	1	2	..	..
571..	1	1	O	..	60	60	150	110	15	125	79	1	1	..	..
572..	1	..	L	..	60	60	5	1	..	1	..	..	..	..	..
573..	..	..	O	..	60	60	6	3	..	3	1	..	1	Y	Y
574..	P	2	L	..	60	60	9	4	5	9	..	..	..	..	..
575..	1	1	O	..	60	60	65	50	..	50	4	1	2	Y	Y		
576..	..	..	L	..	60	54	18	11	..	11	8	2	1	..	..
577..	P	1	L	..	60	54	14	7	..	7	3	1	1	..	..
578..	1	..	O	..	60	30	10	2	..	2	1	..	1	..	..
579..	1	..	O	..	60	60	15	7	..	7	..	..	..	..	..
580..	1	..	O	..	60	60	10	8	..	8	..	..	..	..	..
581..	1	1	O	..	60	60	20	10	..	10	3	..	2	Y	Y		
582..	..	1	O	..	48	48	35	15	5	20	6	1	1	..	..
583..	P	1	L	..	60	60	9	3	4	7	..	..	1	..	..
584..	1	..	L	..	60	60	15	7	..	7	2	..	1	..	..
585..	1	..	L	..	60	60	20	15	..	15	1	..	1	..	..
586..	6	..	O	..	60	60	10	10	..	10	..	..	2	..	..
587..	..	1	L	..	60	54	20	13	7	20	1	1	1	..	..
588..	1	..	L	..	60	60	12	12	..	12	..	..	..	..	..
589..	P	1	L	..	60	60	10	5	..	5	14	1	1	..	..
590..	..	1	L	..	60	60	75	73	2	75	14	..	1	..	..
591..	..	1	O	..	57	57	300	25	250	275	90	1	2	..	..
592..	..	1	L	..	60	60	30	10	20	30	24	1	1	..	..
593..	P	1	L	..	59	59	13	10	..	10	..	..	1	..	..
594..	2	..	L	..	60	60	25	22	..	22	..	1	1	..	..
595..	P	1	L	..	54	54	30	16	..	16	4	..	1	..	..
596..	2	..	O	..	60	60	18	10	..	10	..	..	..	..	..
597..	2	..	O	..	60	48	8	2	..	2	4	1	..	Y	Y		
598..	2	1	L	..	60	48	125	75	..	75	..	1	4	..	..
599..	..	1	O	..	53	53	40	40	..	40	13	1	1	..	..
600..	2	..	L	..	60	48	8	3	..	3	..	1	1	..	..

MILWAUKEE COUNTY,—Continued.

Running number.	DOORS.		ELEVATORS.				Machinery vats and pan guarded.	CLOSETS.		Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER.		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.		Properly provided.	Screened.						Steam.	Water.	Electric, Gas.
551..	O	N	2	Y	B	Y	Y	Y	...	G	48	N	3	1	125	...	...
552..	O	..	1	..	B	..	..	..	...	G	48	..	3	1	340	...	...
553..	I	..	..	..	..	..	..	..	...	G	50	..	..	..	..	...	...
554..	I	..	..	..	..	..	Y	Y	...	G	50	..	..	..	205	...	...
555..	I	..	11	..	..	..	..	..	...	G	52	..	2	3	350	...	...
556..	I	..	1	Y	G	Y	..	Y	...	G	10	..	..	..	2	...	...
557..	..	..	..	..	..	..	..	..	...	..	45	..	..	..	..	...	...
558..	O	N	1	Y	B	Y	Y	Y	...	G	52	..	1	1	15	...	...
559..	I	..	1	..	B	..	..	..	...	G	52	..	..	..	..	...	6
560..	O	..	1	..	..	..	..	..	Y	G	52	..	2	1	55	...	...
561..	I	..	..	..	..	..	..	..	...	G	..	..	..	..	..	...	...
562..	O	..	1	Y	D	Y	Y	Y	Y	G	52	N	..	1	6	...	...
563..	I	..	..	..	..	..	..	..	...	G	26	..	..	..	..	...	...
564..	S	..	..	..	..	..	Y	Y	...	G	52	N	2	1	116	...	...
565..	O	..	..	..	..	..	..	..	...	G	52	..	1	1	85	...	...
566..	I	..	..	..	..	..	..	..	...	G	50	..	..	..	..	...	...
567..	O	..	2	Y	D	Y	Y	Y	...	F	52	N	1	1	30	...	...
568..	I	..	..	..	..	..	..	..	...	G	52	..	1	1	8	...	...
569..	I	..	..	..	..	..	..	..	...	G	52	..	..	..	..	...	...
570..	I	..	1	Y	D	Y	Y	N	G	G	35	..	..	..	..	...	...
571..	I	..	1	..	D	..	..	..	Y	G	52	..	2	1	85	...	...
572..	I	..	..	..	..	..	..	..	...	G	26	..	..	..	..	...	...
573..	I	..	..	..	..	..	Y	..	...	G	52	N	1	1	4	...	...
574..	I	..	..	..	..	..	..	Y	Y	G	4	..	1	1	25	...	...
575..	O	..	1	Y	D	Y	..	..	...	G	52	..	..	..	..	...	...
576..	I	..	1	..	D	..	..	..	Y	G	52	..	..	1	..	...	1
577..	O	..	1	..	D	..	..	..	..	G	..	..	..	..	..	...	...
578..	I	..	..	..	..	..	..	..	...	G	44	..	..	..	..	...	...
579..	I	..	..	..	..	..	Y	..	...	G	52	N	1	1	6	...	...
580..	I	..	..	..	..	..	..	..	...	G	52	..	..	..	..	...	...
581..	I	..	1	Y	B	Y	Y	Y	..	G	52	N	1	1	25	...	...
582..	O	N	1	..	D	..	..	..	Y	G	52	..	2	1	..	...	12
583..	I	..	..	..	..	..	..	..	...	G	52	..	1	1	20	...	...
584..	I	..	..	..	..	..	..	..	...	G	52	..	1	1	8	...	...
585..	I	..	1	Y	B	Y	..	..	...	G	52	..	..	1	10	...	...
586..	I	..	..	..	..	..	..	..	...	G	52	..	1	1	4	...	...
587..	I	..	1	Y	A	Y	..	..	Y	G	52	..	1	1	..	...	3
588..	..	..	..	..	..	..	..	..	...	..	52	..	..	..	..	...	...
589..	O	N	1	Y	G	Y	..	Y	..	G	26	..	..	..	8	...	...
590..	O	..	2	..	B	..	..	..	Y	G	22	..	1	1	25	...	...
591..	O	..	1	..	D	..	..	..	..	G	51	..	2	2	56	...	...
592..	I	..	1	..	I	..	..	..	..	G	52	..	..	1	10	...	...
593..	I	..	..	..	..	..	..	..	...	G	52	..	..	1	8	...	...
594..	S	..	..	..	..	..	..	..	...	G	45	..	1	1	35	...	...
595..	I	..	1	Y	D	Y	..	Y	..	G	45	..	..	1	4	...	...
596..	S	..	..	..	..	..	..	..	...	G	45	..	..	..	..	...	...
597..	I	..	..	..	..	..	Y	..	...	G	16	N	1	1	40	...	...
598..	O	..	2	Y	B	Y	..	..	...	G	52	..	2	1	125	...	...
599..	S	..	1	..	A	..	..	Y	..	G	52	N	1	1	25	...	...
600..	I	..	..	..	..	..	N	..	...	G	52	..	1	1	60	...	...

MILWAUKEE COUNTY,—Continued.

Running number.	DOORS.		ELEVATORS.				Machinery vats and pan guarded.	CLOSETS.		Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER.		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.		Properly provided.	Screened.						Steam.	Water.	Electric, Gas
601..	I	N					Y	Y	G	52	1	2	1	150			
602..	S		1	Y	F	Y			G	50	1	1	1	60			
603..	I		1		G				G	52	N	1	1	60			
604..	I			Y	B	Y		Y	F	50		2	1	120			
605..	I		1	Y	B	Y		Y	G	52		2	1	260			
606..	I	N					Y		F				1				
607..	S		1	Y	B	Y		Y	G	51	N	2	1	150			
608..	I								G	52		1	1	15			
609..	I						Y	Y	F	52			1	10			
610..	O						Y	Y	F	50		1	1	10			
611..	I		2	Y	D	Y			G	52							
612..	O		1		A				G	52		1	1	20			
613..	I		1		T				G	52		3	5	206			
614..	I								G	52		1	1	20			
615..	I								G	52			2	20			
616..	I		2	Y	B	Y		Y	F	52		3	1	100			
617..	I								G	52		1	1	10			
618..	O		3		D	Y			G	52		4	1	200			
619..	I		1		B				G	50		1	1	25			
621..	I	N	1	Y	D	Y	Y	Y	G	0		1		25			
622..	I		2		D				G				1			7½	
623..	I		2		D				G								
624..	I								G					H			
625..	I		2	Y	D	Y			G							4	
626..	I								G	52							
627..	I								F				1	10			
628..	I								F			1	1	35			
629..	I							Y	F					H			
530..	I		1	Y	D	Y	Y	Y	F				1				
631..	I		1		D				F					6			
632..	I		3	Y	D				G	10						4	
633..	I								G					H			
634..	I		1	Y	D	Y	Y	Y	F			1	2	50			
635..	I		1		D				G					15			
636..	I								F			1	1	25			
637..	O		3	Y	D	Y		Y	F							2	

ALBANY.

Running number.	BUILDINGS.		PLANT.		HOURS PER WEEK.		EMPLOYEES.					STAIRWAYS.				
	1 to 2 stories.	3 or more stories.	Owned or leased.	Running or idle.	When running full time.	Date of inspection.	Full capacity.	Date of Inspection.				Number of fire escapes.	Outside.	Inside.	Openings guarded.	Have hand rails
								Male	Female	Total.	Between 14 and 18 years, Under 14 years					
638..	5	.....	O	R	60	60	75	14	13	27	.....	.....	.....	1	Y	Y
639..	1	.....	O	..	60	60	60	4	.....	4	.....	.....	.....	1	..	..
640..	1	.....	O	..	60	60	60	2	.....	2	.....	.....	.....	1	..	..
641..	1	.....	O	..	60	60	60	2	.....	2	.....	.....	.....	1	..	..

AHNAPEE.

642..	5	1	O	R	60	60	45	20	.....	20	2	.....	.....	2	Y	Y
643..	P 1	.....	L	..	60	60	5	4	1	5	.....	.....	.....	1	..	..
644..	2	1	O	..	60	60	55	36	4	40	6	.....	.....	2	..	..
645..	2	.....	O	..	60	60	22	12	.....	18	2	.....	.....	1	..	..
646..	2	.....	O	..	60	60	16	5	.....	5	.....	.....	.....	1	..	..
647..	5	.....	O	..	60	60	15	9	.....	9	.....	.....	.....	.....	.....	.....

ALMA.

648..	3	.....	O	R	60	60	5	5	.....	5	.....	.....	1	1	Y	Y
649..	1	1	O	..	60	72	6	6	.....	6	.....	.....	.....	2	..	..
650..	1	.....	O	..	60	60	3	3	.....	3	.....	.....	.....	1	..	..
651..	.....	.....	L	..	60	60	7	7	.....	7	.....	.....	.....	.....	.....	.....

AMBERG.

652..	1	.....	O	R	60	60	100	20	.....	20	.....	.....	.....	.....	.....	.....
653..	.....	.....	O	I	60	60	20	14	.....	14	.....	1	.....	.....	.....	.....
654..	1	.....	O	R	48	48	12	12	.....	12	.....	.....	.....	.....	.....	.....

AMERY.

655..	2	1	O	R	60	60	5	4	.....	4	.....	.....	1	2	Y	Y
656..	1	.....	O	I	60	60	2	2	.....	2	.....	.....	.....	.....	.....	.....
657..	11	.....	O	I	60	.....	125	20	.....	20	2	.....	2	2	Y	Y
658..	1	.....	O	R	48	48	2	2	.....	2	.....	.....	.....	.....	.....	.....

ANIWA.

659..	2	O	I	60	22	1
-------	---	-------	---	---	----	-------	----	-------	-------	-------	-------	-------	-------	---	-------	-------

ANTIGO.

660..	2	.....	O	R	60	60	.....	4	.....	4	.....	.....	.....	1	.....	.....
661..	2	.....	O	R	66	66	4	4	.....	4	.....	.....	.....	1	Y	Y
662..	5	.....	O	..	60	60	45	45	.....	45	4	.....	1	1	..	..
663..	2	.....	O	..	60	60	50	50	.....	50	4	.....	.....	.....	.....	.....
664..	3	.....	O	..	60	60	15	5	.....	5	.....	.....	.....	.....	.....	.....
665..	2	1	O	R	66	66	9	9	.....	9	.....	.....	.....	1	Y	Y
666..	2	.....	O	..	60	60	50	50	.....	50	.....	.....	3	.....	.....	.....
667..	7	.....	O	..	60	60	50	46	.....	46	4	.....	.....	3	.....	.....
668..	2	.....	O	..	60	60	10	2	.....	4	.....	.....	.....	1	.....	.....
669..	4	1	O	..	60	60	47	45	2	47	5	.....	1	2	.....	.....

GREEN COUNTY.

Running number	DOORS.		ELEVATORS.				CLOSETS.			Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER.		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.	Machinery vats and pan guarded.	Properly provided.	Screened.						Steam.	Water.	Electric, Gas.
638..	I	N	1	Y	D	Y	Y	Y	Y	G	N	...	1	1	30	150	....
639..	I	..	..	..	..	..	..	..	..	G	52	...	..	..	200	...	....
640..	I	..	..	..	..	..	..	..	..	G	52	...	1	1	10	...	....
641..	I	..	..	..	..	..	..	..	..	G	N	...	..	..	20	...	....

KEWAUNEE COUNTY.

642..	I	..	2	Y	B	Y	Y	Y	..	G	35	...	1	1	75	...	....
643..	I	..	..	..	..	..	..	..	..	G	52	...	..	..	...	...	....
644..	O	..	1	Y	B	Y	Y	..	..	G	52	...	1	1	100	...	....
645..	O	..	..	..	..	..	..	..	..	F	52	...	2	1	60	...	....
646..	I	..	..	..	..	..	..	..	..	F	52	...	1	1	15	...	....
647..	I	..	..	..	..	..	..	N	..	G	52	...	1	2	118	...	....

BUFFALO COUNTY.

648..	I	..	..	..	..	..	..	Y	Y	..	G	52	...	1	1	25	...	....
649..	I	..	..	..	..	..	..	..	..	..	G	46	...	2	1	160	...	....
650..	I	..	..	..	..	..	..	..	..	..	G	52	...	..	..	...	...	....
651..	..	..	..	..	..	..	..	..	..	..	G	52	...	..	1	...	...	....

MARINETTE COUNTY.

652..	I	..	..	..	..	..	..	Y	..	..	N	...	1	4	...	...	....
653..	..	..	..	..	..	..	..	..	..	..	..	...	1	1	...	...	....
654..	..	..	..	..	..	..	..	..	..	..	..	...	..	1	...	...	....

POLK COUNTY.

655..	S	..	..	..	..	..	..	Y	Y	..	..	52	...	..	..	80	...	....
656..	I	..	..	..	..	..	..	..	..	..	..	50	...	..	..	...	...	....
657..	..	..	..	..	..	..	..	..	..	..	..	50	...	5	2	295	...	....
658..	I	..	..	..	..	..	..	Y	..	..	G	52	...	..	..	...	...	....

SHAWANO COUNTY.

659..	I	N	G	26	...	1	1	45
-------	---	---	----	----	----	----	----	----	----	----	---	----	-----	---	---	----	-----	------

LANGLADE COUNTY.

660..	I	..	..	..	..	..	..	..	..	..	G	52	...	1	1	25	...	....
661..	I	..	..	..	..	..	..	..	..	..	G	52	...	2	2	220	...	....
662..	S	..	..	..	..	..	..	..	Y	..	G	35	...	1	1	180	...	....
663..	I	..	..	..	..	..	..	..	..	..	G	52	...	1	1	85	...	....
664..	I	..	..	..	..	..	..	..	..	..	G	..	...	1	1	36	...	....
665..	I	..	..	..	..	..	..	N	..	..	G	52	...	1	1	75	...	....
666..	S	..	..	..	..	..	..	Y	..	..	G	26	...	2	1	150	...	....
667..	S	..	1	Y	A	Y	..	..	Y	..	G	52	...	2	1	125	...	....
668..	I	..	..	..	..	..	..	..	..	..	G	52	...	1	1	7	...	....
669..	S	..	1	Y	B	Y	..	..	..	..	G	40	...	2	1	150	...	....

LANGLADGE COUNTY.

Running number	DOORS.		ELEVATORS				Machinery vats and pan guarded.	CLOSETS.			Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER.		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.		Properly provided.	Screened.	Steam.						Water.	Electric, Gas.	
670..	.....	N	.....	.....	.....	.....	Y	.....	.....	.....	.....	22	.....	2	1	75	.....	.....
671..	I	.....	.....	.....	.....	.....	.....	.....	.....	G	.....	52	.....	1	1	10	.....	.....
672..	O	.....	1	Y	D	Y	N	Y	.....	G	.....	52	.....	2	3	144	.....	.....
673..	I	.....	.....	.....	.....	.....	.....	.....	.....	G	.....	52	.....	1	1	35	.....	.....
674..	I	.....	.....	.....	.....	.....	.....	.....	.....	G	.....	30	.....	2	1	125	.....	.....
375..	S	.....	.....	.....	.....	.....	.....	.....	.....	G	.....	52	.....	2	1	75	.....	.....
676..	I	.....	.....	.....	.....	.....	.....	.....	.....	G	.....	52	.....	1	1	5	.....	.....
677..	O	.....	.....	.....	.....	.....	.....	.....	.....	G	.....	22	.....	1	1	40	.....	.....

VILAS COUNTY.

678.. | O | N | | | | .. | Y | | G | 40 | 1 | 7 | | 650 | |

TREMPEALEAU COUNTY.

679..	O	.....	.....	.....	.....	.....	Y	Y	.....	G	.....	.....	.....	.....	.....	.....	.....	.....
680..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
681..	N	.....	.....	.....	.....	.....	N	Y	.....	G	.....	52	.....	1	1	60	.....	.....
682..	.....	.....	.....	.....	.....	.....	.....	.....	.....	G	.....	52	.....	.....	.....	.....	.....	.....

ASHLAND COUNTY.

383..	O	.....	.....	.....	.....	.....	Y	Y	.....	G	.....	52	.....	.....	.....	.....	.....	.....
864..	I	.....	.....	.....	.....	.....	.....	.....	.....	F	.....	52	.....	1	1	50	.....	.....
685..	I	.....	.....	.....	.....	.....	.....	.....	.....	G	.....	50	.....	.....	.....	.....	.....	.....
686..	O	.....	.....	.....	.....	.....	Y	.....	.....	G	.....	52	.....	1	.....	.....	.....	.....
687..	O	.....	1	Y	G	Y	.....	.....	.....	G	.....	50	1	5	5	850	.....	10
688..	O	.....	.....	.....	.....	.....	N	.....	Y	G	.....	52	.....	4	4	650	.....	.....
689..	O	.....	.....	.....	.....	.....	Y	.....	.....	G	.....	16	.....	5	1	200	.....	.....
690..	O	.....	.....	.....	.....	.....	N	.....	.....	F	.....	52	1	1	1	17	.....	.....
691..	O	.....	.....	.....	.....	.....	Y	.....	.....	G	.....	16	.....	4	2	200	.....	.....
692..	O	.....	.....	.....	.....	.....	.....	.....	.....	G	.....	52	.....	3	7	.....	.....	.....
693..	I	.....	.....	.....	.....	.....	.....	.....	Y	G	.....	52	.....	.....	.....	.....	.....	.....
694..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	30	.....	.....	.....	.....	.....	.....
695..	O	.....	.....	.....	.....	.....	Y	Y	.....	G	.....	52	.....	1	1	30	.....	.....
696..	S	.....	.....	.....	.....	.....	N	.....	.....	G	.....	28	.....	6	2	100	.....	.....
697..	O	.....	.....	.....	.....	.....	.....	.....	Y	G	.....	20	.....	3	2	250	.....	.....
698..	S	.....	.....	.....	.....	.....	.....	.....	.....	G	.....	52	2	10	3	735	.....	.....
699..	.....	.....	.....	.....	.....	.....	.....	.....	.....	F	.....	50	1	1	1	60	.....	.....
700..	O	.....	.....	.....	.....	.....	.....	.....	.....	G	.....	2	.....	6	3	550	.....	.....
701..	I	.....	.....	.....	.....	.....	Y	Y	.....	G	.....	.....	.....	2	2	100	.....	.....
702..	O	.....	.....	.....	.....	.....	Y	Y	.....	G	.....	50	.....	2	1	30	.....	.....
703..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	52	.....	2	2	100	.....	.....
704..	O	N	.....	.....	.....	.....	N	Y	.....	F	.....	1	.....	1	1	200	.....	.....
705..	S	.....	.....	.....	.....	.....	.....	.....	.....	G	.....	.....	.....	2	1	400	.....	.....
706..	.....	.....	.....	.....	.....	.....	.....	.....	.....	G	.....	50	1	2	2	160	.....	.....
707..	O	N	.....	.....	.....	.....	Y	.....	.....	G	.....	.....	.....	.....	.....	.....	.....	.....
708..	O	.....	.....	.....	.....	.....	Y	.....	.....	G	.....	52	.....	1	1	16	.....	.....

APPLETON.

Running number.	BUILDINGS.		PLANT.		HOURS PER WEEK.		EMPLOYEES.						STAIRWAYS.							
	1 to 2 stories.	3 or more stories.	Owned or leased.	Running or idle.	When running full time.	Date of inspection.	Full capacity.	Date of Inspection.					Number of fire escapes.	Outside.	Inside.	Openings guarded.	Have hand rails.			
								Male	Female.	Total.	Between 14 and 18 years.	Under 14 years.								
709..		1	O	R	60	60	10	6				6						1	Y	Y
710..		5			60	60	100	70	3			73	14	1	1	2		2		
711..		1	L		66	66	4	2	2			4								
712..		2	O		66	60	5	5										2	Y	Y
713..		3	O		66	65	5	5				5						2		
714..	P	1	L		60	60	12	8	3			11	3			1				
715..		3	O		60	60	10	4				4				2				
716..		2	O		60	60	29	3	26			29	4			1				Y
717..		5	O		60	60	50	36				36				1				
718..		2	O		60	60	25	4	8			12	6		1	1				
719..	P	1	L		60	60	15	9	6			15	3							
720..	P	3	L		70	70	12	3	5			8	4			1		Y	Y	
721..	P	1	O		60	60	12	10				10				2				
722..		1	O		66	66	2	3				3				1				
723..	P	1	L		60	60	6	6				6			1					
724..		1	L		60	60	12	10	2			12				1				
725..	P	1	L		60	60	30	2				8				2				
726..		1	O		60	60	25	17	3			20				1				
727..		3	O		60	60	61	35	26			61	4			2				
728..		4	O		144	144	75	40	15			55				1				
729..		6	O		144	144	60	60				60				2				
730..		3	O		60	60	8	5				5				1				
731..		2	O		60	60	5	2				2								
732..		5	O		144	144	250	82	75			157				6		Y	Y	
733..		4	O		144	144	81	41	40			81			2		4			
734..	P	1	L		60	60	50	1	27			28	12			1				
735..		1	O		60	60	10	7				7	2							
736..		6	O		54	54	25	20				20				1		Y	Y	
737..		4	O		60	60	10	7				7								
738..		8	O		144	144	160	137				137				3		Y	Y	
739..		2	O		60	60	13	13				13				1				
740..		4	O		144	144	100	60	40			100				2				
741..		3	O		144	144	16	16				16				1				
742..	P	1	L		60	60	9	6	3			9				1				
743..		4	O		144	144	56	48				48	3			2				
744..	.....P	1	O		60	60	20	8				8	1			1				
745..		3	O		54	54	5	2				2				1				
746..		5	O		52	60	60	12				12	12			3				
747..		1	L		60	60	6	4				4				1				
748..		3	O		144	144	112	88	24			112			1		1			
749..		3	O		60	60	30	27				27				2				
750..		6	O		60	60	25	12				12				1				
751..		2	O		60	60	5	4				4				1				
752..		2	O		54	54	5	3				3				1				
753..		4	C		60	60	25	18				18	1			2				
754..		2	O		66	66	15	11				11				2				
755..		2	O		144	144	15	15				15			2	2				
756..		2	O	I	60	60	35	5				5				1		Y	Y	

OUTAGAMIE COUNTY.

Running number	DOORS.		ELEVATORS				CLOSETS.			Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER.		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.	Machinery vats and pan guarded.	Properly provided.	Screened.						Steam.	Water.	Electric, Gas
709..	I	N					Y			F	45					350	
710..	I		1	Y	S	Y				G	52		1	1	25	25	
711..	I							Y		G	52						
712..	I									G	52		2	2	45		
713..	I									G	52				600		
714..	I								Y	G	52			1			3
715..	O									F	52					20	
716..	O							Y	Y	G	52					5	
717..	I									G	52			1		80	35
718..	I						Y		Y	G	52		1	1	20		
719..	I							Y		G	52						4
720..	I									G	52		1	1	14		
721..	O		1	Y	D	Y				G	52		1	1			3
722..	I									G	52		2	1	125	500	
723..	I									G	52			1			1
724..	I						Y			G	52		1	1	10		
725..	O							Y	Y	G	51			1			2 1/2
726..	I									G	48		1	1	10		
727..	I		1	Y	T	Y				G	52		1	1	60	100	
728..	I									G	52		2	1	400	500	
729..	I									G	52		2			1500	
730..	I		1	Y	T					G	52					35	
731..	I									C	52		1	1	10		6
732..	S		7	Y	T			Y	Y	G	52		11	4	1500	1000	
733..	I		2		D					G	52		5	1	700	600	
734..	I									G	52						6
735..	I									G	52						
736..	I						Y			G	26					55	
737..	I									G	52		1	1	90		30
738..	I	N								G	46		8		600		
739..	I								Y	G	52		1	1	15		
740..	I		3	Y	S	Y		Y	Y	G	52		6	2	450	500	
741..	I									F	52						400
742..	I								Y	F	52						5
743..	S		1	Y	B	Y				F	52		3	1	30		
744..	I									G	52						
745..	I		1	Y	T	Y	Y			F	52		1	1	35	15	
746..	I							Y		G	52		2	2		42	
747..	I									G	52						
748..	I		3	Y	T	Y	Y	Y	Y	G	46		5	1	700	1000	
749..	I									G	52		1	1	35	25	
750..	S									G	52					40	
751..	I									G	52					35	
752..	I									G	48		1	1	8		
753..	O									G	52		1	1	55		
754..	I									G	52		2	1	150		
755..	I							Y		G	52		2	1	150		
756..	O						Y	Y		G	11						

ATHENS.

Running number.	BUILDINGS.		PLANT.		HOURS PER WEEK.		EMPLOYEES.						STAIRWAYS.				
	1 to 2 stories.	3 or more stories.	Owned or leased.	Running or idle.	When running full time.	Date of inspection.	Full capacity.	Date of Inspection.					Number of fire escapes.	Outside.	Inside.	Openings guarded.	Have hand rails.
								Male	Female.	Total.	Between 14 and 18 years.	Under 14 years					
757..	2	.....	O	R	66	66	24	24	.....	24	.....	.....	.....	2	1	Y	Y
758..	2	.....	O	..	60	60	20	10	.....	10	.....	.....	.....	2	1	..	..
759..	2	.....	O	..	60	60	125	100	.....	100	.....	.....	.....	2	4	..	..

BANGOR.

760.. | 4 | 3 | O | .. | 60 | 60 | 10 | 10 | | 10 | | | | 5 | .. | ..

BARABOO.

761.. | P | 1 | | L | R | 60 | 60 | 13 | 11 | 2 | 13 | | | | 1 | .. | ..
762.. | 1 | | O | .. | 60 | 60 | 5 | 3 | 2 | 5 | | | | .. | .. | ..
763.. | 1 | | O | .. | 59 | 40 | 125 | 125 | | 125 | 5 | | | .. | .. | ..
764.. | 1 | | O | .. | 60 | 60 | 12 | 4 | 8 | 12 | | 2 | | | .. | .. | ..
765.. | 4 | 1 | O | .. | 60 | 60 | 140 | 36 | 35 | 71 | | 6 | | 1 | 1 | Y | Y
766.. | 1 | | O | .. | 60 | 60 | 25 | 10 | 15 | 25 | | 2 | | | 1 | .. | ..
767.. | P | 1 | | L | .. | 60 | 60 | 5 | 5 | | 5 | | | | 2 | .. | ..

BAKRON.

768.. | 1 | 1 | O | .. | 60 | 60 | 6 | 5 | | 5 | | | 1 | 2 | .. | ..
769.. | 8 | | O | .. | 60 | 60 | 25 | 18 | | 18 | 3 | | | .. | .. | ..
770.. | 2 | | O | .. | 60 | 60 | 33 | 8 | 9 | 17 | | | | 2 | 1 | Y | Y
771.. | 4 | | O | .. | 60 | 60 | 25 | 8 | | 8 | | | | .. | .. | ..

BAYFIELD.

772.. | P | 1 | | O | .. | 60 | 60 | 5 | 3 | | 3 | | | | | | .. | ..
773.. | 5 | | O | .. | 60 | 60 | 40 | 34 | | 34 | | | 1 | 3 | Y | Y
774.. | 6 | | O | .. | 60 | 60 | 64 | 64 | | 64 | | | 2 | 2 | .. | ..
775.. | | | L | .. | 60 | 60 | 5 | 5 | | 5 | 1 | 1 | | | .. | ..

BEAR CREEK.

776.. | 2 | | O | .. | 60 | 60 | 10 | 8 | | 8 | | | | 1 | .. | ..
777.. | 4 | | O | .. | 60 | 60 | 3 | 3 | | 3 | | | | 1 | .. | ..
778.. | 2 | | O | .. | 60 | 60 | 10 | 10 | | 10 | | | | .. | .. | ..

BEAVER CREEK.

779.. | 2 | | O | .. | 60 | 60 | 16 | 16 | | 16 | 3 | | | | .. | .. | ..

BEAVER DAM.

780.. | 2 | 1 | O | R | 66 | 66 | 175 | 70 | 91 | 161 | 50 | | 3 | | 2 | Y | Y
781.. | 2 | | O | .. | 60 | 60 | 100 | 80 | 2 | 82 | 8 | | | | 1 | 1 | .. | ..
782.. | 2 | | O | .. | 66 | 66 | 76 | 50 | 25 | 75 | 7 | | 1 | | 1 | .. | ..
783.. | 5 | 1 | L | .. | 60 | 60 | 125 | 56 | 51 | 107 | 9 | | 2 | | 2 | .. | ..
784.. | 1 | 1 | O | .. | 66 | 66 | 3 | 3 | | 3 | | | | 2 | .. | ..
785.. | 4 | 2 | O | .. | 60 | 60 | 100 | 99 | 1 | 100 | | 1 | | 2 | .. | ..

MARATHON COUNTY.

Running number	DOORS.		ELEVATORS.				CLOSETS.			Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER.		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.	Machinery vats and pan guarded.	Properly provided.	Screened.						Steam.	Water.	Electric, Gas.
757..	O	N	..	..	..	..	Y	Y	..	..	40	..	2	1	93	..	..
758..	S	..	..	..	..	..	..	..	..	G	25	..	1	1	50	..	..
759..	O	..	..	..	..	..	..	..	..	G	48	..	6	4	350	..	..

LA CROSSE COUNTY.

760..	I	G	52	..	2	2	70
-------	---	----	----	----	----	----	----	----	----	---	----	----	---	---	----	----	----

SAUK COUNTY.

761..	I	..	..	..	..	..	..	..	..	G	52	..	..	1	..	..	2 1/2
762..	..	..	..	..	..	..	..	..	..	G	52	..	..	..	..	..	..
763..	..	N	..	..	..	..	..	..	..	G	52	..	2	1	50	..	..
764..	..	..	..	..	..	..	..	..	Y	G	52	..	1	1	12	..	..
765..	I	..	1	Y	D	Y	Y	..	..	G	29	..	2	1	100	..	..
766..	I	..	..	..	..	..	..	..	..	G	52	..	..	..	..	..	18
767..	I	..	..	..	..	..	..	Y	..	G	52	..	..	..	..	..	..

BARRON COUNTY.

768..	O	..	..	..	..	..	Y	..	..	G	52	..	..	..	..	..	80
769..	O	..	..	..	..	..	..	..	..	G	20	..	2	2	100	..	..
770..	O	..	..	..	..	..	..	..	..	G	45	..	..	..	..	..	80
771..	O	..	..	..	..	..	..	Y	..	G	45	..	2	1	75	..	..

BAYFIELD.

772..	O	..	..	..	..	..	Y	..	..	G	52	..	..	..	..	..	1
773..	O	..	..	..	..	..	..	..	..	G	36	..	1	1	15	..	..
774..	S	..	..	..	..	..	..	..	..	G	26	..	..	..	..	..	..
775..	S	..	..	..	..	..	..	..	..	G	25	..	1	1	25	..	..

WAUPACA COUNTY.

776..	O	..	..	..	..	..	..	..	..	G	35	..	2	1	40	..	..
777..	S	..	..	..	..	..	N	..	..	G	45	..	1	1	30	..	..
778..	O	..	..	..	..	..	Y	..	..	G	35	..	1	1	35	..	..

MARINETTE COUNTY.

779..	Y
-------	----	----	----	----	----	----	---	----	----	----	----	----	----	----	----	----	----

DODGE COUNTY.

780..	I	N	1	Y	A	..	Y	Y	Y	G	50	..	3	1	250	150	..
781..	S	..	..	..	..	..	..	..	..	G	50	..	1	1	50	..	..
782..	O	..	..	..	..	..	..	..	Y	F	30	..	2	1	75	75	..
783..	I	..	1	Y	A	Y	..	..	..	G	50	..	2	1	75	100	..
784..	I	..	..	..	..	..	..	..	..	G	52	..	1	1	75	60	..
786..	I	..	1	Y	T	Y	Y	Y	..	G	45	..	1	1	75	..	..

PIERCE COUNTY.

Running number.	DOORS.		ELEVATORS.				CLOSETS.		Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER			
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.	Machinery vats and pan guarded.	Properly provided.						Screened.	Steam.	Water.	Electric, Gas.
786..	O	N	.....	.....	.....	.....	.....	Y	.....	F	33	1	2	1	60	.....	.....

SHAWANO COUNTY.

787..	O	.....	.....	.....	.....	.....	.....	Y	.....	G	6	.....	1	1	12	.....	.....
788..	I	N	.....	.....	.....	.....	.....	Y	.....	G	9	.....	1	1	12	.....	.....
789..	O	.....	.....	.....	.....	.....	.....	N	.....	G	13	.....	1	1	35	.....	.....

ROCK COUNTY.

790..	I	.....	2	Y	T	Y	Y	.....	.....	F	52	.....	6	2	450	275	.....
791..	I	.....	1	Y	B	Y	.....	.....	.....	G	52	.....	1	1	6	.....	.....
792..	I	.....	.....	.....	.....	.....	Y	Y	.....	G	52	.....	1	1	.....	.....	2
793..	I	.....	.....	.....	.....	.....	N	Y	.....	G	52	.....	2	2	358	.....	.....
794..	I	.....	.....	.....	.....	.....	Y	Y	Y	G	52	.....	1	1	.....	.....	5
795..	O	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	2	1	85	100	.....
796..	I	.....	.....	.....	.....	.....	.....	.....	Y	G	52	.....	1	1	10	.....	.....
797..	S	.....	2	Y	B	Y	.....	.....	.....	G	52	.....	2	1	200	.....	.....
798..	I	.....	.....	.....	.....	.....	.....	.....	.....	F	52	.....	.....	.....	40	.....	.....
799..	I	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	1	1	100	126	.....
800..	I	.....	.....	.....	.....	.....	.....	Y	Y	G	44	.....	.....	.....	.....	.....	.....
801..	S	.....	.....	.....	.....	.....	N	Y	.....	F	45	.....	1	1	28	.....	.....
802..	I	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	1	1	35	55	.....
803..	I	.....	.....	.....	.....	.....	.....	Y	Y	G	52	.....	1	1	10	.....	.....
804..	I	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	.....	.....	.....	.....	.....
805..	I	.....	.....	.....	.....	.....	Y	Y	Y	G	52	.....	.....	.....	.....	.....	.....
806..	O	.....	1	Y	B	Y	Y	Y	Y	G	52	.....	2	3	4	250	.....
807..	O	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	.....	.....	.....	.....	.....
808..	I	.....	1	Y	B	Y	Y	Y	Y	G	52	.....	2	1	35	.....	.....
809..	I	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	.....	.....	.....	.....	.....
810..	I	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	1	1	15	.....	.....
811..	I	.....	1	Y	B	Y	.....	.....	.....	G	52	.....	.....	.....	.....	15	.....
812..	I	.....	1	.....	.....	.....	.....	.....	.....	G	52	.....	1	1	12	.....	.....
813..	I	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	.....	.....	15	.....	.....
814..	I	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	1	1	6	.....	.....
815..	I	.....	.....	.....	.....	.....	.....	Y	.....	G	.....	.....	1	1	3	.....	.....
816..	I	.....	.....	.....	.....	.....	.....	.....	.....	G	42	.....	1	2	6	.....	5
817..	I	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	.....	.....	.....	.....	.....
818..	I	.....	.....	.....	.....	.....	.....	Y	Y	G	52	.....	.....	.....	.....	.....	.....
819..	I	.....	1	Y	B	Y	Y	Y	Y	G	52	.....	.....	.....	.....	.....	.....
820..	O	.....	.....	.....	.....	.....	.....	.....	.....	G	45	.....	2	1	20	25	.....
821..	I	N	1	Y	G	Y	Y	Y	Y	G	52	.....	2	1	.....	.....	5
822..	O	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	1	2	276	60	.....
823..	O	N	2	Y	G	Y	Y	Y	.....	G	52	.....	2	1	300	.....	.....

BAYFIELD COUNTY.

824..	I	N	N	N	B	14	1	1	80
-------	---	---	-------	-------	-------	-------	---	---	-------	---	----	-------	---	---	----	-------	-------

BERLIN.

Running number.	BUILDINGS.		PLANT.		HOURS PER WEEK.		EMPLOYEES.						STAIRWAYS.					
	1 to 2 stories.	3 or more stories.	Owned or leased.	Running or idle.	When running full time.	Date of inspection.	Full capacity.	Date of Inspection.					Number of fire escapes.	Outside.	Inside.	Openings guarded.	Have hand rails.	
								Male	Female.	Total.	Between 14 and 18 years.	Under 14 years						
825..	1	.....	O	R	60	60	8	4	.....	4	.....	.....	.....	.....	1	.....	Y	.....
826..	1	.....	O	..	120	120	5	3	.....	3	.....	.....	.....	.....	.....	.....	.....	.....
827..	1	.....	O	..	60	60	12	5	7	12	.....	.....	.....	.....	.....	.....	.....	.....
828..	1	.....	O	..	120	120	6	5	.....	5	.....	.....	.....	.....	1	1	Y	.....
829..	1	.....	O	..	60	60	5	4	.....	4	.....	.....	.....	.....	1	.....	.....	.....
830..	P 1	.....	L	..	60	84	27	5	22	27	.....	.....	.....	.....	.....	2	..	..
831..	1	.....	O	..	60	60	300	31	1	32	.....	.....	.....	.....	.....	.....	.....	.....
832..	P 1	.....	L	..	60	60	28	2	4	6	.....	.....	.....	.....	1	1	Y	Y
833..	1	.....	O	..	60	60	30	9	16	25	.....	.....	.....	.....	1	.....	.....	.....
834..	1	.....	L	..	60	60	15	9	.....	9	.....	.....	.....	.....	.....	.....	.....	.....
835..	P 1	.....	L	..	60	84	66	4	19	23	.....	.....	.....	1	.....	Y	Y	.....
836..	1	.....	O	..	60	60	50	15	32	47	.....	.....	.....	1	2	.....	.....	.....
837..	1	1	O	..	60	108	35	26	4	30	.....	.....	.....	.....	1	.....	.....	.....
838..	1	.....	O	..	60	60	2	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
839..	P 1	.....	O	..	60	60	12	3	9	12	.....	.....	.....	.....	1	Y	Y	.....
840..	1	.....	O	..	60	60	5	2	3	5	.....	.....	.....	1	1	..	..	.....
841..	1	.....	O	..	60	60	16	16	.....	16	.....	.....	.....	.....	.....	.....	.....	.....
842..	3	.....	O	..	60	60	14	14	.....	14	.....	.....	.....	.....	1	Y	Y	.....
843..	1	.....	O	..	48	48	8	6	2	8	.....	.....	.....	1	1	.....	.....	.....
844..	1	.....	O	..	60	60	2	2	.....	2	.....	.....	.....	1	1	Y	Y	.....
845..	2	.....	O	..	60	60	5	3	.....	3	.....	.....	.....	1	1	..	..	.....
846..	1	.....	O	I	72	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

BIRNAMWOOD.

847..	2	.....	O	I	60	.....	20	.....	.....	.....	.....	.....	.....	1	1	Y	Y	.....
848..	2	.....	O	..	60	.....	30	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
849..	2	.....	O	..	60	.....	35	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
850..	3	.....	O	R	66	66	16	16	.....	16	.....	.....	.....	2	.....	.....	.....	.....

BLACK CREEK.

851..	2	O	..	60	60	18	4	4	2	1
-------	---	-------	---	----	----	----	----	---	-------	---	---	-------	-------	-------	---	-------	-------	-------

BLOOMER.

852..	2	.....	O	R	60	60	5	4	.....	4	.....	.....	.....	.....	.....	.....	.....	.....
853..	2	.....	O	..	60	60	3	2	.....	2	.....	.....	.....	.....	1	1	Y	Y

BOARDMAN.

854..	4	L	I	60	3	1	2
-------	---	-------	---	---	----	-------	---	-------	-------	-------	-------	-------	-------	-------	---	---	----	----

GREEN LAKE COUNTY.

Running number.	DOORS.		ELEVATORS.			Machinery vats and pan guarded.	CLOSETS.		Sanitary condition.	Weeks in operation, 1906.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER.		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.		Openings guarded.	Properly provided.						Screened.	Steam.	Water.	Electric, Gas
825..	S	N				N	Y		G	50						10
826..	O								G	52		1				
827..								Y	G	52					100	
828..	S	N	1	Y		Y			G	25						
829..							N		F	52		1	1		15	
830..	I	N						N	F	52						
831..										32		3	4		150	
832..	I	N						N	F	45						
833..	I							Y	G	16						
834..									G	48						
835..	I							Y	G							
836..	S							N	B	24						
837..							Y		G	52		2	1		200	
838..																
839..	I	N					Y	Y	F	46						
840..	I								G			1	1		20	
841..									G	20		1	1		30	
842..	S	N	1	Y		N			G	48		1	1		12	
843..	I							Y	G	50						
844..	O						N		G	52		1	1		20	
845..	O								G	52		1	1		35	
846..	I						Y		G	45		2			65	

SHAWANO COUNTY

847..	I						Y		G	4		1	1		45	
848..	I								G	32		1	1		50	
849..	S								G	4		4	1		65	
850..	S						N		G	52		2	1		45	

OUTAGAMIE COUNTY.

851..	I						N	Y	G	37		1	1		25	
-------	---	--	--	--	--	--	---	---	---	----	--	---	---	--	----	--

CHIPPEWA COUNTY.

852..	O	N					Y	Y		25		1	1		15	
853..	O								G	35		1	1		20	

ST. CROIX COUNTY.

854..									G						150	
-------	--	--	--	--	--	--	--	--	---	--	--	--	--	--	-----	--

CALUMET COUNTY.

Running number.	DOORS.		ELEVATORS.				CLOSETS.			Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER.		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.	Machinery vats and pan guarded.	Properly provided.	Screened.						Steam.	Water.	Electric, Gas
855..	I	N					Y			G	45	1	1	45			
856..	I		1	Y	D	Y	N			G	52	1	1	65			
857..	I						Y			G	52	1	1	10			
858..	S									G	13	1	1	45			
859..	I									G	52	1	1	80			
860..	O									G	52	1	1	20			

GREEN COUNTY.

861..	I									G	52					60
862..	I									G	52					
863..	I									G	52					
864..	O									F	52	1	1	7		
865..	I						Y	Y	Y	F	52					
866..	I									G		1	1	8		
867..	I									G	52					
868..	O						Y			G	52					40
869..	I									G	52					

ST. CROIX COUNTY.

870..	O	N						N		F	6	1	1	35		
-------	---	---	--	--	--	--	--	---	--	---	---	---	---	----	--	--

ST. CROIX COUNTY.

871..							Y	Y	Y	G	45	2	1	100		
-------	--	--	--	--	--	--	---	---	---	---	----	---	---	-----	--	--

RACINE COUNTY.

872..	O	N	2	N	B	Y	Y	Y	Y	G	52	1	1	10		
873..	O									G	52	1	1	18		
874..	S									G	26	1	1	35		
875..	I									G	52	1	1	15		
876..	N						Y	Y		G		1	1	8		
877..	I									G	52	1	1	6		
878..	I									G	52					
879..	I						Y			G	52	1	1	15		
880..	O		1	Y	B	Y	N	Y		G	52	2	1	25		
881..	I									G	52					
882..	O		1	Y	B	Y	Y			G	52	2	1	25		
883..	S									G	52	1	1	12		
884..	O									G	52	1	1	15		

CRAWFORD COUNTY.

885..	S	N					Y			G	10	1	1	25		
-------	---	---	--	--	--	--	---	--	--	---	----	---	---	----	--	--

BELL CENTER.

Running number.	BUILDINGS.		PLANT.		HOURS PER WEEK.		EMPLOYEES.					STAIRWAYS.						
	1 to 2 stories.	3 or more stories.	Owned or leased.	Running or idle.	When running full time.	Date of inspection.	Full capacity.	Date of Inspection.					Number of fire escapes.	Outside.	Inside.	Openings guarded.	Have hand rails.	
								Male	Female.	Total.	Between 14 and 18 years.	Under 14 years						
886..	2	.....	O	I	60	.....	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
887..	2	.....	O	R	60	30	8	8	.....	8	1	.....	.....	.....	2	Y	Y	.....

BOSCOBEL.

888..	2	.....	1	O	R	60	60	15	5	.....	5	.....	.....	.....	.....	.....	.....	1	Y	Y
889..	4	.....	.....	O	.....	60	60	5	5	.....	5	.....	.....	.....	.....	.....	.....	2	.....	.....
890..	2	.....	.....	O	.....	60	60	5	5	.....	5	.....	.....	.....	.....	.....	.....	1	.....	.....
891..	6	.....	.....	O	.....	60	60	5	5	.....	5	.....	.....	.....	.....	.....	.....	1	.....	.....
892..	1	.....	.....	L	.....	60	60	5	5	.....	5	1	.....	.....	.....	.....	.....	1	.....	.....
893..	2	.....	.....	O	I	60	.....	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
894..	1	.....	.....	O	R	60	60	15	12	.....	12	.....	.....	.....	.....	.....	.....	.....	.....	.....
895..	3	.....	.....	O	.....	60	60	25	25	.....	25	.....	.....	.....	.....	.....	.....	.....	Y	Y
896..	2	.....	.....	O	I	60	.....	20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
897..	2	.....	.....	O	R	60	60	5	2	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....

CAMERON JUNCTION.

898..	1	O	R	60	60	2	2	2
-------	---	-------	-------	---	---	----	----	---	---	-------	---	-------	-------	-------	-------	-------	-------	-------	-------	-------

CASHTON.

899..	1	.....	1	O	R	60	60	5	5	.....	5	1	.....	.....	.....	.....	.....	1	Y	Y
900..	.....	.....	.....	O	R	60	60	3	3	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....

CATO.

901..	4	.....	.....	O	R	66	66	2	2	.....	2	.....	.....	.....	.....	.....	.....	1	Y	Y
902..	6	.....	.....	O	I	60	.....	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

CECIL.

903..	3	O	R	60	60	12	9	9	1
-------	---	-------	-------	---	---	----	----	----	---	-------	---	-------	-------	-------	-------	-------	-------	---	-------	-------

CEDARBURG.

904..	3	.....	1	O	R	60	60	6	6	.....	6	.....	.....	.....	.....	.....	.....	1	Y	Y
905..	3	.....	.....	O	I	60	.....	17	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
906..	1	.....	1	O	k	66	66	12	12	.....	12	.....	.....	.....	.....	.....	.....	1	.....	.....
907..	1	.....	.....	O	.....	66	66	121	56	49	105	21	4	1	1	.....	.....	2	.....	.....
908..	3	.....	2	O	.....	60	60	5	2	.....	2	.....	.....	.....	.....	.....	.....	2	.....	.....
909..	2	.....	.....	O	R	60	60	60	25	35	60	6	.....	.....	.....	.....	.....	2	Y	Y
910..	6	.....	.....	O	.....	60	60	65	45	.....	45	3	.....	.....	.....	.....	.....	1	.....	.....
911..	.....	.....	.....	O	R	60	60	6	3	.....	3	.....	.....	.....	.....	.....	.....	1	.....	.....
912..	3	.....	1	O	R	60	60	15	10	.....	10	4	.....	.....	.....	.....	.....	2	.....	.....

CRAWFORD COUNTY.

Running number.	DOORS.		ELEVATORS.				Machinery vats and pan guarded.	CLOSETS.		Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.		Properly provided.	Screened.						Steam.	Water.	Electric, Gas
886..	O	.....	.....	.....	.....	.....	Y	.....	.....	G	26	.....	1	1	20	.....	.....
887..	I	N	.....	.....	.....	.....	..	.....	.....	G	12	.....	.....	.....	.....	25	.....

GRANT COUNTY.

888..	I	N	.....	.....	.....	.....	Y	.....	.....	G	52	.....	1	1	.....	.....	.....
889..	O	.....	.....	.....	.....	.....	Y	.....	.....	G	52	.....	1	1	25	.....	.....
890..	I	.....	.....	.....	.....	.....	Y	.....	.....	G	.....	.....	1	1	60	.....	.....
891..	I	.....	.....	.....	.....	.....	Y	.....	.....	G	.....	.....	.....	.....	.....	.....	.....
892..	I	.....	.....	.....	.....	.....	..	Y	.....	G	52	.....	.....	1	.....	.....	2 1/2
893..	I	.....	.....	.....	.....	.....	..	..	Y	G	.....	.....	1	1	15	.....	.....
894..	.....	.....	.....	.....	.....	.....	..	..	Y	G	13	.....	.....	.....	.....	.....	.....
895..	O	N	.....	.....	.....	.....	Y	Y	.....	G	52	.....	1	1	40	.....	.....
896..	O	.....	.....	.....	.....	.....	..	..	.....	G	.....	.....	1	1	40	.....	.....
897..	I	N	.....	.....	.....	.....	..	.....	.....	G	52	.....	1	1	5	.....	.....

BARRON COUNTY.

898..	O	N	Y	Y	G	24	1	1	10
-------	---	---	-------	-------	-------	-------	---	---	-------	---	----	-------	---	---	----	-------	-------

MONROE COUNTY.

899..	I	N	.....	.....	.....	.....	Y	Y	.....	F	52	.....	1	1	98	.....	.....
900..	S	.....	.....	.....	.....	.....	..	.....	.....	F	45	.....	.....	1	2	.....	.....

MANITOWOC COUNTY.

901..	S	.....	1	Y	B	Y	Y	.....	.....	G	52	.....	1	1	15	.....	.....
902..	S	.....	.....	.....	.....	.....	..	.....	.....	G	26	.....	1	1	50	.....	.....

SHAWANO COUNTY.

903..	I	N	Y	G	5	1	1	30
-------	---	---	-------	-------	-------	-------	---	-------	-------	---	---	-------	---	---	----	-------	-------

OZAUKEE COUNTY.

904..	I	N	.....	.....	.....	.....	Y	.....	.....	G	52	.....	1	1	25	.....	.....
905..	I	.....	.....	.....	.....	.....	..	.....	.....	G	.....	.....	1	1	16	.....	.....
906..	I	.....	.....	.....	.....	.....	..	.....	.....	G	52	.....	.....	.....	.....	95	.....
907..	I	.....	1	Y	G	Y	..	Y	Y	G	52	.....	2	1	50	.....	.....
908..	I	.....	.....	.....	.....	.....	..	.....	.....	G	52	.....	.....	1	20	35	.....
909..	O	N	.....	.....	.....	.....	Y	Y	Y	G	52	.....	1	1	20	.....	.....
910..	S	.....	1	Y	G	Y	..	.....	.....	G	52	.....	2	1	75	.....	.....
911..	I	.....	.....	.....	.....	.....	..	.....	.....	G	52	.....	.....	.....	.....	60	.....
912..	I	.....	.....	.....	.....	.....	..	.....	.....	G	52	.....	1	1	30	.....	.....

DUNN COUNTY.

Running number	DOORS.		ELEVATORS.				CLOSETS.		Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER.		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.	Machinery rats and pan guarded.	Properly provided.						Screened.	Steam.	Water.	Electric, Gas
913..	S O	N	.....	.....	.....	.....	N	.....	.....	36	.....	1	1	75	1500	.....

TAYLOR COUNTY.

914..	N	Y	G	32-50	5	1	200
-------	---	----	-------	-------	-------	-------	---	-------	---	-------	-------	---	---	-----	-------	-------

CALUMET COUNTY.

915..	S	N	.....	.....	.....	.....	Y	.....	G	52	.....	1	1	35	.....	.....
916..	I	..	.....	.....	.....	.....	..	.....	G	52	.....	1	1	50	42	.....
917..	I	..	.....	.....	.....	.....	..	.....	G	52	.....	1	1	25	.....	.....
918..	I	..	.....	.....	.....	.....	Y	Y	G	52	.....	..	..	.....	.....	.....
919..	S	..	.....	.....	.....	.....	Y	.....	G	26	.....	1	1	75	.....	.....
920..	I	..	.....	.....	.....	.....	..	.....	F	52	.....	1	1	6	.....	.....

CHIPPEWA COUNTY.

921..	N	N	Y	Y	G	19	2	1	60
-------	---	---	-------	-------	-------	-------	---	---	---	----	-------	---	---	----	-------	-------

CHIPPEWA COUNTY.

922..	N	N	.....	.....	.....	.....	Y	Y	.....	52	.....	1	1	25	480	.....
923..	N	N	.....	.....	.....	.....	..	..	G	43	.....	3	2	350	1500	.....
924..	N	N	.....	.....	.....	.....	..	..	G	26	.....	.....	.....	.....	175	.....
925..	O	..	.....	.....	.....	.....	..	..	G	52	.....	2	2	100	.....	.....
926..	N	1	N	.....	.....	.....	N	Y	G	40	.....	1	1	35	.....	.....
927..	N	..	.....	.....	.....	.....	Y	Y	G	50	.....	3	2	50	.....	.....

POLK COUNTY.

928..	O	N	Y	Y	G
-------	---	---	-------	-------	-------	-------	---	---	---	-------	-------	-------	-------	-------	-------	-------

MARINETTE COUNTY.

929..	S	N	.....	.....	.....	.....	Y	.....	G	52	.....	1	1	40	.....	.....
930..	O	..	.....	.....	.....	.....	N	.....	G	13	.....	1	1	25	.....	.....
931..	I	..	.....	.....	.....	.....	Y	.....	G	52	.....	1	1	5	.....	.....
932..	I	..	.....	.....	.....	.....	..	.....	G	52	.....	1	1	8	.....	.....
933..	I	..	.....	.....	.....	.....	..	.....	G	52	.....	1	1	65	80	.....
934..	I O	..	.....	.....	.....	.....	Y	.....	G	52	.....	2	1	100	.....	.....
935..	O	..	.....	.....	.....	.....	..	.....	G	52	.....	.....	.....	.....	66	.....
936..	O	..	.....	.....	.....	.....	Y	.....	G	13	.....	1	1	50	.....	.....
937..	I	N	.....	.....	.....	.....	..	.....	G	52	.....	1	1	10	.....	.....

WAUPACA COUNTY.

938..	15	3	1
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	----	-------	---	---	-------	-------	-------

COLUMBUS.

Running number.	BUILDINGS.		PLANT.		HOURS PER WEEK.		EMPLOYEES.					STAIRWAYS.					
	1 to 2 stories.	3 or more stories.	Owned or leased.	Running or idle.	When running full time.	Date of inspection.	Full capacity.	Date of Inspection.					Number of fire escapes.	Outside.	Inside.	Openings guarded.	Have hand rails.
								Male	Female.	Total.	Between 14 and 18 years.	Under 14 years					
939..	3	2	O	R	66	66	15	14	1	15	2	1	.....	.....	6	Y	Y

COMBINED LOCKS.

940..	11	1	O	R	144	72	175	30	9	39	1	3	Y	Y
-------	----	---	---	---	-----	----	-----	----	---	----	-------	-------	-------	-------	---	---	---	---

CUMBERLAND.

941..	5	.....	O	R	66	66	100	100	.....	100	.....	.....	.....	.....	2	3	Y	Y
942..	5	.....	O	R	66	66	6	6	.....	6	.....	.....	.....	.....	.....	.....	.....	.....
943..	5	.....	L	R	60	60	20	16	.....	16	1	.....	.....	.....	1	.....	.....	.....

COLBY.

944..	3	.....	O	R	60	60	20	10	.....	10	.....	.....	.....	.....	1	3	Y	Y
945..	6	.....	O	..	60	60	20	20	.....	20	.....	.....	.....	.....	1	3	..	..
946..	1	.....	O	..	60	60	8	8	.....	8	2	.....	.....	.....	.....	.....	.....	.....

DANCY.

947..	2	O	I	60	34	45	12	12	1	1	Y	Y
-------	---	-------	---	---	----	----	----	----	-------	----	-------	-------	-------	-------	---	---	---	---

DARLINGTON.

948..	1	.....	O	R	60	60	3	3	.....	3	.....	.....	.....	.....	.....	.....	.....	.....
949..	2	.....	O	..	60	60	3	3	.....	3	.....	.....	.....	.....	.....	.....	.....	.....
950..	1	.....	L	..	60	60	3	3	.....	3	.....	.....	.....	.....	1	.....	.....	Y
951..	1	.....	O	..	60	60	2	2	.....	2	.....	.....	.....	.....	.....	.....	.....	.....
952..	1	.....	O	..	60	60	2	2	.....	2	.....	.....	.....	.....	1	.....	.....	.....
953..	1	.....	O	..	60	60	8	5	.....	5	2	.....	.....	.....	1	.....	.....	.....

DELANVAN.

954..	1	.....	O	R	60	60	10	2	2	.....	4	.....	.....	.....	.....	.....	.....	.....
955..	2	.....	O	..	60	66	2	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
956..	1	2	O	..	60	60	7	7	.....	7	.....	.....	.....	.....	.....	.....	.....	.....
957..	1	.....	O	..	60	60	5	4	1	.....	5	.....	.....	.....	.....	.....	.....	.....
958..	4	.....	O	..	60	60	5	5	.....	5	.....	.....	.....	.....	.....	.....	.....	.....
959..	2	1	O	R	60	60	5	3	.....	3	.....	.....	.....	.....	.....	.....	.....	.....
960..	1	.....	L	..	60	60	10	4	.....	9	1	.....	.....	.....	.....	.....	.....	.....

DE PERE.

961..	2	1	O	R	60	66	12	12	.....	12	.....	.....	.....	.....	1	Y	.....	.....
962..	3	.....	O	..	60	60	5	4	.....	4	.....	.....	.....	.....	1	.....	.....	Y
963..	5	.....	O	..	60	54	25	20	.....	20	.....	.....	.....	.....	1	.....	.....	Y
964..	4	.....	O	..	60	60	20	14	.....	14	.....	.....	.....	.....	.....	.....	.....	.....
965..	3	6	O	..	60	60	300	117	153	270	.....	.....	.....	.....	2	.....	.....	.....

DOWNING.

966..	5	O	I	60	65	2	1	N	N
-------	---	-------	---	---	----	-------	----	-------	-------	-------	-------	-------	-------	-------	---	---	---	---

COLUMBIA COUNTY.

Running number	DOORS.		ELEVATORS				CLOSETS.		Sanitary condition	Weeks in operation, 1896.	Number of accidents.	Number of boilers	Number of engines.	HORSE-POWER		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.	Machinery vats and pan guarded.	Properly provided.						Screened.	Steam	Water.	Electric, Gas
939..	I	N					Y	Y	G	44-52		2	3	110		

OUTAGAMIE COUNTY.

940..	I	N	4	Y	T	Y	Y	Y	Y	G	26		10			[5400]
-------	---	---	---	---	---	---	---	---	---	---	----	--	----	--	--	--------

BARRON COUNTY.

941..	S	O	N				N	Y	G	30	1	6	2	220		
942..							Y		G	50		1	1	35		
943..	O						N		G	30		1	2	65		

MARATHON COUNTY.

944..	O	N					Y		F	30		2	1	40		
945..	I						Y	Y	G	40		1	1	30		
946..	O						N	Y	G	50		1	1	30		

PORTAGE COUNTY.

947..	O	N					Y	Y	G	32		2	1	75		
-------	---	---	--	--	--	--	---	---	---	----	--	---	---	----	--	--

LAFAYETTE COUNTY.

948..	I						Y		G	52			1	2		
949..	I						N		G	13				150		
950..	I						Y		G	52			1	2		
951..	S								G	17			1	10		
952..	I								G	52			1	15		
953..	I								G	52						

WALWORTH COUNTY.

954..	I	N					Y	Y	G	52		1	1	15		
955..	I						N		G	52		1	1	110		
956..	I						Y		G	52		1		85		
957..	I							Y	G	52			1	2		
958..	I								G	26		1	1	15		
959..										40		1	1	35		
960..	I	N					Y	Y	G	45						

BROWN COUNTY.

961..	I	N					Y		G	52		1		125		
962..	I								G	52		1	1	65		
963..	S							Y	G	45		1	1	75		
964..	O								F	52		1	1	25		
965..	I		5	Y	A	T	Y		Y	52		2	1	1000	900	

DUNN COUNTY.

966..	O	N					N	Y	F	30		4	1	110		
-------	---	---	--	--	--	--	---	---	---	----	--	---	---	-----	--	--

DOWNSVILLE.

Running number.	BUILDINGS.		PLANT.		HOURS PER WEEK.		EMPLOYEES.					STAIRWAYS.				
	1 to 2 stories.	3 or more stories.	Owned or leased.	Running or idle.	When running full time.	Date of inspection.	Full capacity.	Date of Inspection.				Number of fire escapes.	Outside.	Inside.	Openings guarded.	Have hand rails.
								Ma's	Female.	Total.	Between 14 and 18 years.					
967..	5|.....		O	R	66	66	95	95|.....	95|.....						2|.....	Y

DRUMMOND.

968..	7|.....		O	R	66	66	160	160	4|	164	1			2|	3|	Y	Y
-------	---------	--	---	---	----	----	-----	-----	---	-----	---	--	--	---	---	---	---

DUCK CREEK.

969..	1|.....		O	R	60	54	40	16|		16|							
970..	1|.....		O		60	60	154	85|		85|	2|						
971..	1|.....		L	I	60		25|										

DUNBAR.

972..	9|.....		O	R	60	60	150	150|.....	150	3|				2|	4|	Y	Y
-------	---------	--	---	---	----	----	-----	-----------	-----	---	--	--	--	---	---	---	---

DUNDAS.

973..	3|.....		O	R	66	66	2|	2|		2|					1|	Y	Y
974..	5|.....		O		66	66	26|	14|		14|	2|				1|		

DORCHESTER.

975..	1|.....		O	I	60		30	5|.....	5|.....						2|	Y	Y
-------	---------	--	---	---	----	--	----	---------	---------	--	--	--	--	--	---	---	---

EAU CLAIRE.

976.	4|.....		O	R	60	60	18	14|.....	14|					2|	1|	Y	Y	
977.	P 2|.....		O		84	84	15	12	1	13								
978.	P 1|.....		O		60	60	30	7	23	30								
979.	P 1|.....		O		60	60	50	40		40					1|	1|	Y	Y
980.	P 1|.....		L		60	60	11	9	2	11				1|	1|			
981.	5|.....		O		60	60	180	180		180								
982.	4|.....		O		120	120	110	100	10	110	6				3|	Y	Y	
983.	1|.....		O		60	60	6	6		6								
984.	3| 1|		O		60	60	40	40		40	2			2|	2|	Y	Y	
985.	1|.....		O		60	60	12	5		5				2|	2|			
986.	4| 1|		O		60	60	5	4		4				2|	2|			
987.	P 1|.....		L		60	60	16	7	2	9				2|	2|			
988.	1|.....		O	I	60	60	16							2|	2|			
989.	4|.....		O	R	84	84	18			18				1|	2|	Y	Y	
990.	2|.....		O		84	84	6	3		3								
991.	3| 1|		O		60	60	40	10	6	16			1|		2|	Y	Y	
992.	5|.....		O		60	60	150	150		150	1			2|	3|			
993.	8|.....		O		60	60	25	20		20					2|			
994.	6|.....		O		60	60	40	40		40	1			1|	1|			
995.	1|.....		L		60	60	6	5	1	6	1			2|	1|			
996.	P 1|.....		L		60	60	5	4	1	5					1|			
997.	4|.....		O		60	60	3	2		2					2|			
998.	1|.....		L		60	60	36	27	9	36	2			2|	1|	Y		
999.	3|.....		O		60	60	100	90		90	38	2						
1000.	2|.....		O		60	60	10	10		10								

DUNN COUNTY.

Running number	DOORS.		ELEVATORS				Machinery vats and pan guarded.	CLOSETS.		Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.		Properly provided.	Screened.						Steam.	Water.	Electric, Gas.
967..	S	O	N				N	Y		G	119 d		1	1	1500		

BAYFIELD COUNTY.

968..	S	O	N				N	Y			50		8	3	575		
-------	---	---	---	--	--	--	---	---	--	--	----	--	---	---	-----	--	--

BROWN COUNTY.

969..											24		3				
970..											48	1	3				
971..											22		1	1			

MARINETTE COUNTY.

972..	S	O	N				N	Y		G	25-40		8	3	200		
-------	---	---	---	--	--	--	---	---	--	---	-------	--	---	---	-----	--	--

CALUMET COUNTY.

973..	I		N				Y			G	52		1	1	12		
974..	O						Y			G	9 m				40		

CLARK COUNTY.

975..	I		N							F	13		2	1	50		
-------	---	--	---	--	--	--	--	--	--	---	----	--	---	---	----	--	--

EAU CLAIRE COUNTY.

976.	I		N				Y	Y		G	52						
977.	I									G	52		2	1	300		
978.	I								Y	G	52		1	1	50		
979.	I		N	1	Y	D	Y			G	52						5
980.	I								Y	G	52						5
981.	I									G	25		8	1	550		
982.	S	I		2	Y	A	G	Y	Y	G	52		2		1000		
983.	S	I								G	51						
984.	S	I								G	50		1	1	25		
985.	I									G	40						
986.	I						Y	Y		G	52		1	1	30		
987.	I			1	Y	O	Y		Y	G	52						2
988.	I									G	42		2	1	125		
989.	I									G	52		2	1	200	750	
990.	I						Y			G	52		2	2	50		
991.	I			1	Y	D	Y		Y	G	48				200		
992.	I									G	17		10	3	950		
993.	I		N							G	40		1	1	40		
994.	I									G	22		6	1	250		
995.	I								Y	G	52						
996.	I			1		N	N		Y	G							10
997.	I									G	52		1	1	60		
998.	I						N	Y		G	52						5
999.	I						N	Y		G	10	1	2	1	175		
1000.	I						Y			G	10		1	1	20		

EAU CLAIRE.

Running number.	BUILDINGS.		PLANT.		HOURS PER WEEK.		EMPLOYEES					Number of fire escapes.	STAIRWAYS.						
	1 to 2 stories.	3 or more stories.	Owned or leased.	Running or idle.	When running full time.	Date of inspection.	Full capacity.	Date of Inspection.					Outside.	Inside.	Openings guarded.	Have hand rails.			
								Male	Female.	Total	Between 14 and 18 years.						Under 14 years		
1001.	3	1	O	R	60	60	30	25	.....	25	.....	.....	.....	2	2	.....	Y	Y
1002.	7	O	60	60	75	50	50	2	2	Y	Y
1003.	5	O	60	60	30	28	30	2	3	Y
1004.	9	O	60	60	175	175	175	2	2
1005.	2	2	O	.....	60	60	160	160	.....	160	.....	.....	.....	2	4	.....	.....	.....
1006.	7	1	O	.....	60	60	115	65	.....	65	.....	.....	.....	3	1	.....	.....	.....
1007.	P 1	.....	L	.....	60	60	6	3	3	6	1	.....	.....	.....	.....	.....	.....	.....
1008.	2	.....	O	.....	60	60	25	10	.....	10	.....	.....	.....	1	1	.....	.....	.....
1009.	8	.....	O	.....	60	60	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1010.	7	.....	O	.....	60	60	300	269	.....	269	.....	.....	.....	1	3	Y	Y	.....
1011.	7	.....	O	.....	60	60	183	183	.....	183	3	1	.....	.....	4	.....	.....	.....
1012.	4	1	O	.....	60	60	11	11	.....	11	.....	.....	.....	1	5	.....	.....	.....
1013.	P 1	.....	O	.....	60	60	9	9	.....	9	.....	.....	.....	.....	.....	.....	.....	.....
1014.	8	.....	O	I	60	.....	80	4	.....	4	.....	.....	.....	1	3	Y	Y	.....

EDGAR.

1015.	1	.....	O	I	66	.....	35	.....	.....	.....	4	.....	.....	.....	.....	.....	.....	.....
1016.	2	.....	O	R	66	66	60	60	.....	60	.....	.....	.....	1	1	Y	Y	.....
1017.	1	.....	O	.....	66	66	20	20	.....	20	.....	.....	.....	.....	.....	.....	.....	.....
1018.	1	.....	O	.....	60	60	30	30	.....	30	.....	.....	.....	.....	.....	.....	.....	.....

EDGERTON.

1019.	.....	P 1	L	R	60	60	10	5	1	6	2	.....	.....	1	1	Y	Y	.....
1020.	2	.....	O	.....	60	.....	25	20	.....	20	.....	.....	.....	.....	.....	.....	.....	.....
1021.	2	.....	O	I	60	.....	21	.....	.....	.....	.....	.....	.....	1	.....	Y	Y	.....
1022.	P 1	.....	O	R	60	60	5	3	.....	3	.....	.....	.....	.....	.....	.....	.....	.....

ELAND JUNCTION.

1023.	2	.....	O	R	60	60	25	25	.....	25	.....	.....	.....	.....	.....	.....	.....	.....
1024.	6	.....	O	.....	60	60	30	30	.....	30	.....	.....	.....	2	1	Y	Y	.....
1025.	4	.....	O	.....	65	66	30	30	.....	30	.....	.....	.....	1	2	Y	Y	.....

ELKHORN.

1026.	2	.....	O	R	60	69	5	2	.....	2	.....	.....	.....	.....	1	Y	Y	.....
1027.	.....	P 1	O	.....	60	60	7	4	3	7	.....	.....	.....	.....	.....	.....	.....	.....
1028.	2	.....	O	.....	60	60	5	2	.....	2	.....	.....	.....	.....	1	Y	Y	.....
1029.	1	.....	O	.....	60	60	7	3	.....	3	.....	.....	.....	.....	1	.....	.....	.....
1030.	4	.....	O	.....	60	60	10	8	.....	8	.....	.....	.....	1	1	.....	.....	.....
1031.	1	1	O	.....	60	60	20	12	.....	12	.....	.....	.....	.....	1	Y	Y	.....
1032.	2	.....	O	.....	60	60	5	3	.....	3	.....	.....	.....	.....	1	.....	.....	.....

ELLIS JUNCTION.

1033.	4	O	R	60	60	165	103	1	104	5	Y	Y
-------	---	-------	---	---	----	----	-----	-----	---	-----	---	-------	-------	-------	-------	---	---	-------

EAU CLAIRE COUNTY—Continued.

Running number	DOORS.		ELEVATORS				Machinery vats and pan guarded.	CLOSETS.		Sanitary condition.	Weeks in operation, 1886.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.		Properly provided.	Screened.						Steam.	Water.	Electric, Gas.
1001.	I	N	.....	.....	.....	.....	Y	Y	.....	.....	45	.....	1	1	20	.....	.....
1002.	I	I	.....	.....	.....	.....	.....	.....	.....	.....	52	.....	1	1	150	.....	40
1003.	I	..	1	Y	A G	Y	..	..	Y	G	40	.....	2	1	200	.....	.....
1004.	I	..	1	..	A G	..	N	..	.....	.....	33	.....	2	1	450	.....	.....
1005.	S O	..	.....	.....	A D	..	Y	..	.....	G	40	.....	2	1	150	.....	.....
1006.	I	..	.....	.....	.....	.....	..	..	.....	G	52	.....	1	1	50	.....	.....
1007.	I	..	.....	.....	.....	.....	..	..	.....	G	52	.....	.....	.....	.....	.....	.....
1008.	I	..	.....	.....	.....	.....	..	..	.....	G	40	.....	1	1	50	.....	.....
1009.	I	..	.....	.....	.....	.....	N	..	.....	G	32	.....	2	1	60	.....	.....
1010.	I	..	.....	.....	.....	.....	Y	..	.....	G	22	.....	4	2	750	.....	.....
1011.	S O	..	.....	.....	.....	.....	Y	..	.....	G	20	.....	9	2	800	.....	.....
1012.	I	..	.....	.....	.....	.....	..	..	.....	G	52	.....	1	2	30	.....	.....
1013.	I	..	.....	.....	.....	.....	..	..	.....	.....	52	.....	.....	.....	.....	.....	.....
1014.	I	..	2	Y	A G	Y	..	..	.....	G	25	.....	3	2	125	.....	.....

MARATHON COUNTY.

1015.	I	N	.....	.....	.....	.....	Y	.....	.....	G	16	.....	2	1	40	.....	.....
1016.	O I	..	.....	.....	.....	.....	N	.....	.....	.....	13	.....	5	1	100	.....	.....
1017.	O I	..	.....	.....	.....	.....	..	..	.....	G	24	.....	2	1	45	.....	.....
1018.	O I	..	.....	.....	.....	.....	..	..	.....	G	32	.....	1	1	40	.....	.....

ROCK COUNTY.

1019.	I	N	.....	.....	.....	.....	.....	.....	.....	G	52	.....	.....	.....	.....	.....	.....
1020.	..	..	.....	.....	.....	.....	Y	.....	.....	.....	20	.....	1	1	35	.....	.....
1021.	I	N	.....	.....	.....	.....	..	..	.....	G	1	.....	1	1	50	.....	.....
1022.	I	..	.....	.....	.....	.....	..	Y	.....	G	52	.....	.....	1	2	.....	.....

SHAWANO COUNTY.

1023.	.....	N	.....	.....	.....	.....	N	.....	.....	G	52	.....	4	2	30	.....	.....
1024.	O	..	.....	.....	.....	.....	..	.....	.....	G	40	.....	2	2	200	.....	15
1025.	O	..	.....	.....	.....	.....	..	.....	.....	G	4	.....	2	1	60	.....	.....

WALWORTH COUNTY.

1026.	I	N	.....	.....	.....	.....	N	.....	.....	G	52	.....	1	1	15	.....	.....
1027.	I	..	.....	.....	.....	.....	Y	Y	Y	G	52	.....	.....	1	4	.....	.....
1028.	.....	.....	.....	.....	.....	.....	N	.....	.....	G	N	.....	1	1	20	.....	.....
1029.	I	..	.....	.....	.....	.....	..	..	.....	G	26	.....	.....	.....	.....	.....	.....
1030.	I	..	.....	.....	.....	.....	Y	.....	.....	G	52	.....	1	1	8	.....	.....
1031.	I	..	1	.....	.....	.....	..	..	.....	G	26	.....	1	1	25	.....	.....
1032.	I	..	.....	.....	.....	.....	N	.....	.....	G	4	.....	1	1	20	.....	.....

MARINETTE COUNTY.

1033.	O	N	[12-32]	4	3
-------	---	---	-------	-------	-------	-------	-------	-------	-------	-------	---------	-------	---	---	-------	-------	-------

ELMHURST.

Running number.	BUILDINGS.		PLANT.		HOURS PER WEEK.		EMPLOYEES					Number of fire escapes.	STAIRWAYS.						
	1 to 2 stories.	3 or more stories.	Owned or leased.	Running or idle.	When running full time.	Date of inspection.	Full capacity.	Date of Inspection.					Outside.	Inside.	Openings guarded.	Have hand rails			
								Male	Female.	Total.	Between 14 and 18 years.						Under 14 years.		
1034.	1	O	I	66	35	
1035.	2	O	..	66	40	1	Y	Y

ELMWOOD.

1036.	4	.....	O	R	60	60	22	5	.....	5	.....	.....	.....	.....	.....	.....	.....	.....	.....
1037.	2	.....	O	..	60	60	10	10	.....	10	.....	.....	.....	.....	.....	.....	.....	.....	.....

ELLSWORTH.

1038.	2	O	R	60	60	18	18	18	3	1	1	1	1	Y	Y
-------	---	-------	---	---	----	----	----	----	-------	----	---	---	-------	---	---	-------	---	---	---

EMBARRASS.

1039.	2	.....	O	R	60	60	25	20	.....	20	2	.....	.....	.....	.....	.....	1	N	N
1040.	1	.....	O	..	60	60	2	2	.....	2	.....	.....	.....	.....	.....	.....	1	Y	Y

EVANSVILLE.

1040.	10	.....	O	R	60	60	55	55	.....	55	.....	.....	.....	.....	.....	.....	1	2	Y	Y
1042.	1	.....	O	..	60	60	7	4	.....	4	.....	.....	.....	.....	.....	.....	1	1	Y	Y

EAGLE RIVER.

1043.	O	60	60	100	15	15
-------	-------	-------	---	-------	----	----	-----	----	-------	----	-------	-------	-------	-------	-------	-------	-------	-------	-------

EAGLE.

1044.	O	I	60	12	4	4
-------	-------	-------	---	---	----	-------	----	---	-------	---	-------	-------	-------	-------	-------	-------	-------	-------	-------

ELCHO.

1045.	1	O	R	60	60	35	32	32	2	1	Y
-------	-------	---	---	---	----	----	----	----	-------	----	---	---	-------	-------	-------	-------	-------	-------	---

FAIRCHILD.

1046.	18	O	R	63	33	200	158	158	1	2	Y	Y
-------	----	-------	---	---	----	----	-----	-----	-------	-----	-------	-------	-------	-------	-------	-------	---	---	---	---

FARM HILL.

1047.	3	O	I	15	10	10
-------	---	-------	---	---	-------	-------	----	----	-------	----	-------	-------	-------	-------	-------	-------	-------	-------	-------

FENWOOD.

1048.	2	O	I	66	25		
1049.	5	O	R	66	53	15	10	10	1	Y	N

SHAWANO COUNTY.

Running number	DOORS.		ELEVATORS				Machinery vats and pan guarded.	CLOSETS.		Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.		Properly provided.	Screened.						Steam.	Water.	Electric, Gas.
1034.	I	N	.....	.....	.....	.....	Y	.....	G	12	.....	1	1	45	.....	.....	.....
1035.	I	..	.....	.....	.....	.....	..	.....	G	25	.....	3	2	80	.....	.....	.....

PIERCE COUNTY.

1036.	.....	N	.....	.....	.....	.....	N	Y	.....	G	30	.....	2	2	65	.....	.....
1037.	.....	..	.....	.....	.....	.....	..	..	.....	F	.....	1	1	40	.....	.....	.....

PIERCE COUNTY.

1038.	O	N	Y	Y	F	40	1	1	30
-------	---	---	-------	-------	-------	-------	---	---	-------	---	----	-------	---	---	----	-------	-------

WAUPACA COUNTY.

1039.	S	N	.....	.....	.....	.....	Y	.....	G	35	.....	.....	.....	.....	90	.....	.....
1040.	I	..	.....	.....	.....	.....	..	.....	G	52	.....	1	1	10	.....	.....	.....

ROCK COUNTY.

1041.	.....	N	1	Y	D	Y	.....	Y	.....	G	41	.....	2	2	130	.....	.....
1042.	N	N	.....	.....	.....	.....	Y	..	.....	G	52	.....	.....	.....	.....	.....	.....

VILAS COUNTY.

1043.	Y	Y	6
-------	-------	-------	-------	-------	-------	-------	---	---	-------	-------	---	-------	-------	-------	-------	-------	-------

VILAS COUNTY.

1044.	Y	Y	35	1	1	40
-------	-------	-------	-------	-------	-------	-------	---	---	-------	-------	----	-------	---	---	----	-------	-------

LANGLADGE COUNTY.

1045.	O	N	N	Y	G	24	3	1	300
-------	---	---	-------	-------	-------	-------	---	---	-------	---	----	-------	---	---	-----	-------	-------

CLARK COUNTY.

1046.	N	N	N	Y	G	34	7	6	350
-------	---	---	-------	-------	-------	-------	---	---	-------	---	----	-------	---	---	-----	-------	-------

PIERCE COUNTY.

1047.	N	N	Y	14	1	1	25
-------	-------	---	-------	-------	-------	-------	---	---	-------	-------	----	-------	---	---	----	-------	-------

MARATHON COUNTY.

1048.	O	N	.....	.....	.....	.....	Y	.....	G	20	.....	5	1	90	.....	.....	.....
1049.	S	N	.....	.....	.....	.....	N	.....	G	24	.....	2	1	60	.....	.....	.....

FOND DU LAC.

Running number.	BUILDINGS.		PLANT.		HOURS PER WEEK.		EMPLOYEES.					Number of fire escapes.	STAIRWAYS.				
	1 to 2 stories.	3 or more stories.	Owned or leased.	Running or idle.	When running full time.	Date of inspection.	Full capacity.	Date of Inspection.					Outside.	Inside.	Openings guarded.	Have hand rails.	
								Males.	Female.	Total.	Between 14 and 18 years.						Under 14 years.
1050.	1	.....	O	R	60	60	12	12	.....	12	.....	.....	.....	1	Y	Y
1051.	1	.....	O	O	54	54	8	6	.....	6	.....	.....	.....	2	.....	.....
1052.	3	.....	O	.....	60	60	100	85	.....	85	.....	.....	2	2	.....	.....
1053.	4	.....	O	.....	60	60	8	8	.....	8	.....	.....	1	1	.....	.....
1054.	P 1	.....	L	.....	48	48	25	8	3	11	.....	.....	1	1	.....	.....
1055.	.....	P 1	L	.....	60	60	19	13	6	19	6	.....	1	1	.....	.....
1056.	P 1	.....	L	I	60	.....	8	1	.....	1	.....	.....	1	1	.....	.....
1057.	.....	P 1	L	R	60	60	9	3	6	12	.....	.....	1	1	.....	.....
1058.	1	.....	O	.....	28	28	10	10	.....	10	.....	.....	.....	1	.....	.....
1059.	3	.....	O	.....	60	60	35	23	.....	23	.....	.....	1	Y	Y	.....
1060.	1	1	O	.....	168	168	13	13	.....	13	.....	4	2	2	.....	.....
1061.	1	.....	L	.....	60	60	19	2	17	19	.....	.....	1	1	.....	.....
1062.	.....	P 1	L	.....	60	60	10	3	5	8	.....	.....	1	1	.....	.....
1063.	4	.....	O	.....	60	60	40	40	.....	40	.....	.....	1	1	.....	.....
1064.	.....	P 1	L	.....	57	57	12	12	.....	12	1	.....	2	1	.....	.....
1065.	3	.....	O	.....	60	60	6	5	1	6	.....	.....	.....	.....	.....	.....
1066.	6	.....	O	.....	60	60	60	45	.....	45	.....	.....	1	Y	Y	.....
1067.	1	.....	L	.....	60	60	17	15	2	17	.....	.....	1	1	.....	.....
1068.	1	1	O	.....	60	60	144	144	.....	144	30	1	.....	2	.....	.....
1069.	.....	P 1	O	.....	90	90	15	8	7	15	.....	.....	2	2	.....	.....
1070.	2	.....	O	.....	60	60	15	9	.....	9	.....	.....	2	.....	.....	.....
1071.	3	.....	O	.....	60	60	24	16	4	20	2	.....	1	.....	.....	.....
1072.	P 1	.....	L	.....	54	54	8	1	6	7	1	.....	.....	1	.....	.....
1073.	.....	P 1	O	.....	60	60	20	14	6	20	.....	.....	1	1	.....	.....
1074.	3	.....	O	.....	60	60	8	7	1	8	.....	.....	1	1	.....	.....
1075.	6	.....	O	.....	48	48	39	20	.....	20	.....	.....	1	1	.....	.....
1076.	P 1	.....	L	.....	60	60	10	4	5	9	2	.....	1	1	.....	.....
1077.	1	2	O	.....	60	48	175	150	.....	150	7	1	3	6	.....	.....
1078.	2	1	O	.....	60	60	60	20	.....	20	.....	.....	1	2	.....	.....
1079.	1	1	L	I	60	.....	.....	.....	.....	.....	.....	.....	1	2	Y	Y
1080.	7	.....	O	R	60	32	50	26	.....	26	.....	.....	1	2	Y	Y
1081.	1	.....	O	.....	60	60	45	41	4	45	6	.....	1	.....	.....	.....
1082.	1	.....	O	.....	60	60	16	8	5	13	2	.....	1	.....	.....	.....
1083.	.....	2	O	.....	54	54	53	34	19	53	.....	1	.....	4	.....	.....
1084.	2	2	O	.....	60	60	225	225	.....	225	.....	4	2	1	.....	.....

FORT ATKINSON.

1085.	11	1	O	R	60	60	87	87	.....	87	12	.....	.....	5	Y	Y
1086.	1	.....	O	.....	66	66	20	18	.....	18	3	.....	.....	.....	.....	.....
1087.	P 1	.....	L	.....	60	60	4	1	3	4	.....	.....	.....	.....	.....	.....
1088.	5	.....	O	.....	60	60	7	7	.....	7	2	.....	.....	2	Y	Y
1089.	11	4	O	.....	60	60	225	198	16	214	26	1	3	9	.....	.....
1090.	3	.....	O	.....	60	60	8	5	.....	5	.....	.....	1	1	.....	.....
1091.	5	.....	O	.....	60	60	15	10	.....	10	.....	.....	2	2	.....	.....
1092.	1	.....	L	.....	60	54	24	16	.....	16	4	.....	.....	1	.....	.....
1093.	3	1	O	.....	60	60	6	5	.....	5	.....	.....	.....	1	.....	.....

FACTORY INSPECTION.

FOND DU LAC COUNTY.

Running number	DOORS.		ELEVATORS				Machinery vats and pan guarded.	CLOSETS.		Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER.		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.		Properly provided.	Screened.						Steam.	Water.	Electric, Gas
1050.	I	N	.....	.....	.....	.....	Y	Y	.....	G	47	.....	2	1	75	.....
1051.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	49	.....	1	1	25	.....
1052.	I	.....	1	Y	D	Y	.....	Y	.....	G	39	.....	2	2	150	.....
1053.	I	.....	1	Y	D	.....	.....	.....	.....	G	50	.....	1	1	35	.....
1054.	O	.....	.....	.....	.....	.....	.....	.....	Y	G	50	.....	.....	.....	.....	.....
1055.	O	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	1	1	.....	G25
1056.	O	.....	.....	.....	.....	.....	.....	.....	.....	G	25	.....	.....	.....	.....	.....
1057.	O	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	1	1	30	.....
1058.	O	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	3	3	300	.....
1059.	I	.....	.....	.....	.....	.....	Y	.....	.....	G	52	.....	1	1	40	.....
1060.	O	.....	.....	.....	.....	.....	.....	.....	.....	G	40	.....	1	1	50	.....
1061.	O	.....	.....	.....	.....	.....	.....	.....	Y	G	49	.....	1	1	.....	4
1062.	O	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	1	1	17	.....
1063.	O	.....	1	Y	N	Y	.....	.....	.....	G	40	.....	2	1	75	.....
1064.	O	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	.....	1	.....	1½
1065.	.....	.....	.....	.....	.....	.....	.....	.....	Y	G	52	.....	2	1	80	.....
1066.	Y	N	.....	.....	.....	.....	Y	.....	.....	G	52	.....	1	1	50	.....
1067.	N	.....	.....	.....	.....	.....	.....	.....	Y	G	52	.....	.....	.....	.....	.....
1068.	O	.....	1	Y	T	Y	.....	.....	.....	G	39	.....	2	2	300	.....
1069.	Y	.....	1	.....	.....	.....	.....	.....	Y	G	52	.....	.....	.....	.....	.....
1070.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	.....	.....	.....	.....
1071.	O	.....	1	Y	D	Y	.....	.....	Y	G	48	.....	1	1	75	.....
1072.	O	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	.....	.....	.....	.....
1073.	O	.....	.....	.....	.....	.....	.....	Y	.....	G	52	.....	.....	1	.....	15
1074.	Y	.....	.....	.....	.....	.....	.....	Y	Y	G	52	.....	.....	.....	.....	.....
1075.	I	N	1	Y	D	Y	.....	.....	.....	G	48	.....	1	1	150	.....
1076.	I	.....	.....	.....	.....	.....	.....	.....	Y	G	52	.....	.....	1	.....	4
1077.	O	.....	3	Y	D	Y	.....	.....	.....	G	52	.....	2	2	200	.....
1078.	O	.....	1	.....	D	.....	.....	.....	.....	G	36	.....	2	2	100	.....
1079.	.....	.....	1	.....	B	.....	.....	.....	.....	G	.....	.....	1	1	.....	20
1080.	I	N	.....	.....	.....	.....	.....	.....	.....	G	51	.....	1	1	60	.....
1081.	I	.....	.....	.....	.....	.....	.....	.....	Y	G	40	.....	.....	.....	.....	.....
1082.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	45	.....	.....	.....	.....	.....
1083.	I	.....	1	Y	D	Y	.....	.....	.....	G	52	.....	1	1	50	.....
1084.	I	.....	1	.....	D	.....	Y	.....	.....	F	37½	.....	4	2	300	.....

JEFFERSON COUNTY.

1085.	I	N	3	Y	B	Y	Y	.....	.....	G	52	.....	1	2	143	.....
1086.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	21	.....	1	1	25	.....
1087.	I	N	.....	.....	.....	.....	.....	.....	Y	G	52	.....	1	1	6	.....
1088.	O	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	2	1	15	.....
1089.	I	.....	2	Y	D	Y	.....	.....	Y	G	52	.....	2	2	125	.....
1090.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	1	1	18	.....
1091.	S	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	2	2	35	.....
1092.	I	N	1	Y	B	Y	.....	.....	.....	G	26	.....	1	1	12	.....
1093.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	25	.....	1	1	25	.....

FOSSFUR.

Running number.	BUILDINGS.		PLANT.		HOURS PER WEEK.		EMPLOYEES					STAIRWAYS.						
	1 to 2 stories.	3 or more stories.	Owned or leased.	Running or idle.	When running full time.	Date of inspection.	Full capacity.	Date of Inspection.					Number of fire escapes.	Outside.	Inside.	Openings guarded.	Have hand rails.	
								Male	Female.	Total.	Between 14 and 18 years.	Under 14 years						
1094.	1		O	I	60	60												

FOUNTAIN CITY.

1095.	2	1	O	R	72	72	5	5	5	5	5	1	2	Y	Y
1096.	1		O		60	60	2	1	1	1			2		
1097.	2		O		60	60	4	4	4	4					
1098.	1	1	O		60	60	6	6	6	6			1	Y	Y
1099.	3		O		60	60	5	4	4	4			1		
1100.	1		O		60	60	5	5	5	5					

GREEN BAY.

1101.	1		O	R	60	60	55	3	2	5					
1102.	2		O		60	60	10	7		7		1	1	Y	Y
1103.	1	1	O		60	60	60	12	24	36	11	1	3		
1104.	14		O		60	60	90	75		75		3	1		
1105.	2		O		60	60	15	10		10					
1106.	2		O	I	60	60	6						1		
1107.	3		O	R	60	60	12	12		12		1	1		
1108.	2		O		60	60	6	1		1					
1109.	9		O		60	60	125	125		125			1	Y	Y
1110.	4	1	O		144	144	125	125		125	2	1	1		
1111.	4		L		60	60	60	32		32					
1112.	1		O		60	60	5	4		4	2		1	Y	Y
1113.	5		O		60	60	29	29		29	4		2		
1114.	2		O		60	60	42	42		42			1		
1115.	3	1	O		66	66	20	20		20		2	1	2	
1116.	P 1		L		60	60	5	2		2	1				
1117.	3		O		66	66	13	13		13					
1118.	4		O		66	66	9	9		9					
1119.	1		O		60	60	5	2		2					
1120.	P 1		O		60	60	18	15	3	18			1	Y	Y
1121.	3		O		60	60	22	15		15		1	2		
1122.	1	1	O		60	60	35	30	5	35		1	2		
1123.	7		O		84	84	16	16		16			1		
1124.	4	1	O		60	60	45	27		27			2		
1125.	P 1		L		60	60	15	8	3	11			1		
1126.	1		O		72	72	2	2		2					
1127.	5		O		60	60	65	60		60					
1128.	3	3	O		60	60	20	20		20			3	Y	Y
1129.	P 1		O		60	60	5	3		3					
1130.	1		O		60	60	5	3		3	2				
1131.	P 1		L		60	60	5	1		1			1	Y	Y
1132.	2	1	O		144	144		11		11		1	1		
1133.	3		O		144	144	30	23	7	30	1				
1134.	1		O	I	66	66	15								
1135.	1		O	R	60	60	20	16		16	2				

LINCOLN COUNTY.

Running number	DOORS.		ELEVATORS.				CLOSETS.			Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER.		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.	Machinery vats and pan guarded.	Properly provided.	Screened.						Steam.	Water.	Electric, Gas
1094.											20		1	1	60		

BUFFALO COUNTY.

1095.	N	N						N	Y		G	40		1	1	60	
1096.	Y							Y			G	52		1	1		15
1097.								Y	Y		G	52		1	1	10	
1098.	O							Y			G	52		1	1	25	
1099.	N										G	52		1	1	12	
1100.	N										G	50					

BROWN COUNTY.

1101.	S	N									F	52		1			
1102.	I										G	52					
1103.	I		I	Y	G	Y	Y	Y	Y		G	52		1	1	50	
1104.	O										G	52		2	1	80	
1105.	S										G	52		1	1	10	
1106.	I										I	30		1	1	40	
1107.	S		I	Y	B	Y	Y				G	30		2	2	250	
1108.	O										G			1	1	10	
1109.	S								Y		G	52		2	1	100	
1110.	O										G			5	1	300	
1111.	S										G			6	1	200	
1112.	O										G	52		1	1	50	
1113.	S										G	52		1	1	35	
1114.	S							Y			G	15		2	1	325	
1115.	I										G	52		2	1	200	
1116.	I										G	52		1	3		
1117.	I	N									G	26		1	1	85	
1118.	S										G	52		3	2	300	
1119.	I										G	52		1	2	75	
1120.	I	N									G	52		1	1	15	3
1121.	I										G	52					
1122.	I		I	Y	S	Y	Y	Y	Y		G	52			1	10	
1123.	I										F	52		4	2	750	
1124.	I								Y	Y	G	17		1	1	90	
1125.	I										G	52		1	1	10	
1126.	I										G	52		4	3		
1127.	O										G	52		1	1	25	
1128.	I							Y			G	52		2	1	48	
1129.											G	52					
1130.	I										G	52		1	1	7	
1131.	I										G	52					
1132.	O						Y	Y			G	52		1	1	150	
1133.									Y		G	45		2	1	125	
1134.											G			1	1	30	
1135.											G	16		1	1	30	

BROWN COUNTY—Continued.

Running number	DOORS.		ELEVATORS				Machinery vats and pan guarded.	CLOSETS.			Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.		Properly provided.	Screened.	Steam.						Water.	Electric, Gas	
1136.	I	N	.....	.....	.....	.....	Y	.....	.....	G	52	.....	1	1	18	.....	.....
1137.	S	..	.....	.....	.....	.....	..	.....	.....	G	52	.....	1	1	15	.....	.....
1138.	I	..	.....	.....	.....	.....	..	.....	.....	..	52	.....	..	..	..	.....	.....
1139.	I	..	.....	.....	.....	.....	..	.....	.....	G	52	.....	1	1	46	.....	.....
1140.	S	..	2	Y	T	Y	..	.....	.....	G	45	.....	1	1	90	.....	.....
1141.	S	..	1	Y	G	..	..	Y	Y	G	45	.....	1	1	65	.....	.....
1142.	I	..	.....	.....	.....	.....	..	.....	.....	..	52	.....	..	..	..	.....	.....
1143.	I	..	.....	.....	.....	.....	Y	.....	.....	G	45	.....	2	1	100	.....	.....
1144.	I	..	.....	.....	.....	.....	..	.....	.....	..	45	.....	1	1	50	.....	.....
1145.	S	..	.....	.....	.....	.....	..	.....	.....	G	52	.....	1	1	50	.....	.....
1146.	S	..	.....	.....	.....	.....	..	.....	.....	G	52	.....	1	1	45	.....	.....
1147.	S	..	.....	.....	.....	.....	..	Y	.....	G	35	.....	6	2	425	.....	.....
1148.	I	..	.....	.....	.....	.....	..	.....	.....	G	50	.....	1	1	150	.....	.....
1149.	S	..	.....	.....	.....	.....	..	.....	.....	G	26	.....	1	1	15	.....	.....
1150.	I	..	1	Y	B	Y	..	Y	.....	G	52	.....	1	1	40	.....	.....
1151.	I	..	.....	.....	.....	.....	..	Y	.....	G	52	.....	..	..	..	.....	.....
1152.	I	..	.....	.....	.....	.....	Y	.....	.....	F	52	.....	..	1	4 1/2	.....	.....
1153.	I	N	1	Y	B	Y	..	.....	.....	G	17	.....	1	1	12	.....	.....
1154.	I	..	.....	.....	.....	.....	..	.....	.....	G	52	.....	..	..	..	.....	.....
1155.	I	..	.....	.....	.....	.....	Y	.....	.....	G	52	.....	..	1	11	.....	.....
1156.	I	..	.....	.....	.....	.....	Y	.....	.....	..	21	.....	1	1	18	.....	.....
1157.	I	N	2	Y	D	Y	..	.....	.....	G	42	.....	1	1	50	.....	.....
1158.	I	..	.....	.....	.....	.....	..	Y	.....	G	52	.....	1	1	4	.....	.....
1159.	I	..	.....	.....	.....	.....	..	.....	.....	G	52	.....	..	..	..	.....	.....
1160.	O	..	.....	.....	.....	.....	Y	Y	.....	G	52	.....	1	1	25	.....	.....

IRON COUNTY.

1161.	O	N	Y	Y	G	33	8	3	350
-------	---	---	-------	-------	-------	-------	---	---	-------	---	----	-------	---	---	-----	-------	-------

PIERCE COUNTY.

1162.	.....	N	.....	.....	.....	.....	N	.....	.....	F	14	.....	1	1	30	.....	.....
1163.	.....	..	.....	.....	.....	.....	Y	Y	.....	F	20	1	1	1	40	.....	.....

CHIPPEWA COUNTY.

1164.	I	N	N	Y	23	2	2	100
-------	---	---	-------	-------	-------	-------	---	---	-------	-------	----	-------	---	---	-----	-------	-------

ST. CROIX COUNTY.

1165.	O	N	1	Y	G	Y	.....	Y	.....	G	45	.....	14	9	481	.....	.....
1166.	.....	..	.....	.....	.....	.....	Y	..	.....	G	52	.....	.....	.....	.....	.....	.....

OZAUKEE COUNTY.

1167.	I	N	.....	.....	.....	.....	Y	Y	.....	G	52	.....	.....	.....	.....	84	.....
1168.	I	..	2	Y	D	Y	..	.....	.....	.....	52	.....	1	.....	.....	75	.....

GRATOIT.

Running number.	BUILDINGS.		PLANT.		HOURS PER WEEK.		EMPLOYEES.					STAIRWAYS.					
	1 to 2 stories.	3 or more stories.	Owned or leased.	Running or idle.	When running full time.	Date of inspection.	Full capacity.	Date of Inspection.				Number of fire escapes.	Outside.	Inside.	Openings guarded.	Have hand rails.	
								Male	Female.	Total.	Between 14 and 18 years.						Under 14 years
1169.	2	.....	O	R	60	60	3	2	.....	2	.....	.....	.....	.....	1	.....	.....

GREENWOOD.

1170.	2	O	R	60	60	9	5	5
-------	---	-------	---	---	----	----	---	---	-------	---	-------	-------	-------	-------	-------	-------	-------

HARTFORD.

1171.	3	.....	O	R	60	60	15	3	2	5	.....	.....	.....	.....	1	Y	Y
1172.	5	.....	O	..	60	60	20	13	.....	13	.....	.....	.....	.....	1	..	..
1173.	2	.....	O	..	60	48	6	3	.....	3	.....	.....	.....	.....	1	..	..
1174.	2	2	O	I	60	.....	5	5	.....	5	.....	.....	.....	.....	1	..	..
1175.	7	.....	L	R	60	60	.....	12	.....	12	2	.....	.....	.....	3	..	..
1176.	2	3	O	..	60	60	6	6	.....	6	.....	.....	.....	.....	3	..	..
1177.	4	1	O	..	60	60	.....	3	.....	3	.....	.....	.....	.....	1	..	..
1178.	5	.....	O	..	60	60	45	32	13	45	6	.....	.....	2	.....	Y	..

HATCHVILLE.

1179.	2	O	R	60	60	20	15	15	1
-------	---	-------	---	---	----	----	----	----	-------	----	-------	-------	-------	-------	---	-------	----

HAWTHORNE.

1180.	7	I	60	70	16	16	2
-------	---	-------	-------	---	----	-------	----	----	-------	----	-------	-------	-------	---	-------	----	----

HAYWARD.

1181.	1	.....	O	R	144	144	3	3	.....	3	.....	.....	.....	.....	.....	.....	.....
1182.	2	1	O	..	60	60	5	3	.....	3	.....	.....	.....	.....	1	Y	Y
1183.	11	.....	O	..	66	66	250	210	.....	210	1	.....	.....	2	4	..	..

HAZELHURST.

1184.	4	O	R	120	120	270	268	268	5	1	Y	Y
-------	---	-------	---	---	-----	-----	-----	-----	-------	-----	---	-------	-------	-------	---	---	---

HOULTON.

1185.	7	O	R	60	60	144	144	144	5	2	4	Y	Y
-------	---	-------	---	---	----	----	-----	-----	-------	-----	---	---	-------	---	-------	---	---

HORICON.

1186.	2	O	R	60	60	175	155	1	156	4	1	2	Y	Y
-------	---	-------	---	---	----	----	-----	-----	---	-----	---	-------	-------	---	---	---	---

HORNERSVILLE.

1187.	2	O	R	60	63	22	22	22	1	Y	Y
-------	---	-------	---	---	----	----	----	----	-------	----	-------	-------	-------	-------	---	-------	---	---

GREEN COUNTY.

Running number	DOORS.		ELEVATORS.				Machinery vats and pan guarded.	CLOSETS.		Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER.			
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.		Properly provided.	Screened.						Steam.	Water.	Electric, Gas.	
1169.	I	N	Y	G	26	20

CLARK COUNTY.

1170.	N	N	Y	G	30	1	1	50
-------	-------	---	-------	-------	-------	-------	---	---	---	----	-------	---	---	----	-------	-------	-------	-------

WASHINGTON COUNTY.

1171.	I	N	.....	.....	.....	.....	Y	Y	G	52	.....	1	1	10	.....	.....	.....	.....
1172.	I	..	.....	.....	.....	.....	..	..	G	53	.....	1	1	85	.....	.....	.....	.....
1173.	I	..	.....	.....	.....	.....	..	..	G	53	.....	1	1	80	75	.....	.....	.....
1174.	I	..	.....	.....	.....	.....	..	..	G	50	.....	1	1	25	.....	.....	.....	.....
1175.	I	..	.....	.....	.....	.....	..	..	G	52	.....	1	1	50	.....	.....	.....	.....
1176.	I	..	.....	.....	.....	.....	..	..	G	42	.....	2	1	20	.....	.....	.....	.....
1177.	I	..	.....	.....	.....	.....	..	..	G	52	.....	1	1	40	.....	.....	.....	.....
1178.	I	..	.....	.....	.....	.....	..	Y	Y	F	52	.....	1	1	75	.....	.....	2½

DUNN COUNTY.

1179.	S	N	N	Y	F	30	1	1	1	30
-------	---	---	-------	-------	-------	-------	---	---	---	----	---	---	---	----	-------	-------	-------	-------

DOUGLAS COUNTY.

1180.	O	N	N	Y	G	19	3	4	185
-------	---	---	-------	-------	-------	-------	---	---	---	----	-------	---	---	-----	-------	-------	-------	-------

SAWYER COUNTY.

1181.	.....	N	.....	.....	.....	.....	Y	Y	.....	52	.....	2	1	1500	.....	.....	.....	.....
1182.	S	..	.....	.....	.....	.....	..	..	G	50	.....	1	1	25	.....	.....	.....	.....
1183.	S	..	.....	.....	.....	.....	N	..	G	35	.....	8	3	1500	.....	.....	.....	.....

ONEIDA COUNTY.

1184.	O	Y	G	52	4	2	325
-------	---	-------	-------	-------	-------	-------	---	-------	---	----	-------	---	---	-----	-------	-------	-------	-------

ST. CROIX COUNTY.

1185.	N	N	Y	Y	G	60	7	2	700
-------	---	---	-------	-------	-------	-------	---	---	---	----	-------	---	---	-----	-------	-------	-------	-------

DODGE COUNTY.

1186.	I	N	1	Y	B	Y	Y	Y	G	27	2	2	100
-------	---	---	---	---	---	---	---	---	---	----	-------	---	---	-----	-------	-------	-------	-------

BAYFIELD COUNTY.

1187.	Y	Y	G	1	2	80
-------	-------	-------	-------	-------	-------	-------	---	---	---	-------	-------	---	---	----	-------	-------	-------	-------

OUTAGAMIE COUNTY.

Running number	DOORS.		ELEVATORS.				CLOSETS.		Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER.		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.	Machinery vats and pan guarded.	Properly provided.						Screened.	Steam.	Water.	Electric, Gas.
1188.	O	N	.....	.....	.....	.....	Y	.....	.....	G	.....	1	1	35	.....	.....
1189.	O	..	.....	.....	.....	.....	..	.....	.....	G	45	1	1	35	.....	.....
1190.	O	..	.....	.....	.....	.....	..	.....	.....	G	10	1	1	45	.....	.....
1191.	I	..	.....	.....	.....	.....	..	.....	.....	G	52	1	1	64	.....	.....

MARATHON COUNTY.

1192.	S	N	G	8	1	1	45
-------	---	---	-------	-------	-------	-------	-------	-------	-------	---	---	---	---	----	-------	-------

BAYFIELD COUNTY.

1193.	O	N	.....	.....	.....	.....	Y	Y	.....	G	32	3	3	300	.....	.....
1194.	O	..	.....	.....	.....	.....	..	..	.....	G	15	6	6	150	.....	.....

ST. CROIX COUNTY.

1195.	.....	N	.....	.....	.....	.....	Y	Y	.....	G	52	4	1	260	.....	.....
1196.	I	..	.....	.....	.....	.....	..	..	.....	G	52	.....	.....	.....	.....	.....
1197.	.....	..	.....	.....	.....	.....	Y	..	Y	G	.....	1	1	7	.....	.....
1198.	.....	..	.....	.....	.....	.....	..	..	.....	G	14	6	2	290	.....	.....
1199.	.....	..	.....	.....	.....	.....	..	Y	.....	G	52	.....	.....	.....	.....	.....
1200.	S	..	1	Y	.....	N	N	..	.....	G	5	2	1	75	.....	.....

SHAWANO COUNTY.

1201.	I	N	Y	G	30	1	1	40
-------	---	---	-------	-------	-------	-------	---	-------	-------	---	----	---	---	----	-------	-------

IRON COUNTY.

1202.	Y	N	.....	.....	.....	.....	Y	Y	.....	G	52	.....	.....	.....	.....	.....
1203.	Y	..	.....	.....	.....	.....	..	..	Y	G	52	.....	.....	.....	.....	.....
1204.	Y	..	.....	.....	.....	.....	..	..	..	G	52	.....	.....	.....	5	.....

WOOD COUNTY.

1205.	O	N	Y	G	48	2	1	100
-------	---	---	-------	-------	-------	-------	---	-------	-------	---	----	---	---	-----	-------	-------

BAYFIELD COUNTY.

1206.	O	G	40
-------	---	-------	-------	-------	-------	-------	-------	-------	-------	---	----	-------	-------	-------	-------	-------

BUFFALO COUNTY.

1207.	O	N	.....	.....	.....	.....	Y	.....	.....	.....	52	.....	.....	.....	.....	.....
1208.	..	..	.....	.....	.....	.....	..	Y	.....	G	52	.....	.....	.....	.....	.....
1209.	I	.....	.....	.....	.....	.....	.....	.....	.....	.....	45	.....	.....	.....	40	.....
1210.	I	.....	.....	.....	.....	.....	.....	Y	.....	G	52	.....	.....	.....	.....	.....

INGRAM.

Running number.	BUILDINGS.		PLANT.		HOURS PER WEEK.		EMPLOYEES						STAIRWAYS.				
	1 to 2 stories.	3 or more stories.	Owned or leased.	Running or idle.	When running full time.	Date of inspection.	Full capacity.	Date of inspection.					Number of fire escapes.	Outside.	Inside.	Cip-nings guarded.	Have hand rails
								Male	Female	Total	Between 14 and 18 years.	Under 14 years.					
1211.	4	.....	O	I	6	60	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

IRON RIVER.

1212.	1	.....	O	R	60	60	3	2	1	3	.....	.....	.....	.....	.....	.....	.....
1213.	7	.....	O	..	60	60	105	105	.....	105	.....	.....	.....	.....	.....	.....	.....
1214.	5	.....	O	..	60	60	100	60	.....	60	.....	.....	.....	2	2	1	Y Y

IRVINGTON.

1215.	5	O	R	60	60	130	130	130	35	18	1	3	Y	Y
-------	---	-------	---	---	----	----	-----	-----	-------	-----	----	----	-------	---	---	---	---

JANESVILLE.

1216.	4	.....	O	R	.....	60	51	51	.....	51	.....	.....	.....	.....	.....	.....	.....
1217.	P 1	.....	L	..	60	60	5	2	3	5	.....	.....	.....	.....	1	Y	Y
1218.	2	1	O	..	60	60	6	6	.....	6	.....	.....	.....	.....	2	..	..
1219.	1	.....	O	..	60	60	5	5	.....	5	.....	.....	.....	.....	1	..	Y
1220.	P 1	.....	L	..	60	60	18	13	5	18	.....	.....	.....	1	1	Y	..
1221.	5	.....	O	..	60	60	20	15	.....	15	.....	.....	.....	1	1	Y	Y
1222.	3	.....	O	I	.....	60	48	.....	.....	.....	.....	.....	.....	1	2	..	..
1223.	3	.....	O	R	.....	60	50	27	.....	27	.....	.....	.....	1	1	..	..
1224.	3	.....	O	L	.....	60	26	26	.....	26	.....	.....	.....	.....	.....	.....	.....
1225.	2	.....	L	..	60	60	20	20	.....	20	.....	.....	.....	.....	4	Y	Y
1226.	P 1	.....	L	..	60	60	50	10	40	50	.....	.....	.....	.....	.....	.....	.....
1227.	6	.....	O	..	60	66	300	115	185	300	.....	.....	2	.....	2	Y	Y
1228.	2	.....	O	..	60	60	12	(12	.....	12	.....	.....	.....	.....	1	..	..
1229.	1	.....	L	..	60	60	6	6	.....	6	.....	.....	.....	.....	2	..	..
1230.	5	2	O	..	60	59	250	117	.....	117	.....	.....	1	.....	5	..	..
1231.	1	.....	L	..	60	60	12	5	.....	5	.....	.....	.....	.....	1	..	..
1232.	.....	.....	O	..	60	60	110	6	104	110	.....	.....	.....	.....	1	..	..
1233.	.....	1	L	..	60	60	100	58	42	100	10	.....	.....	1	1	..	..
1234.	3	.....	L	..	60	60	30	15	.....	15	.....	.....	.....	.....	2	..	..
1235.	4	.....	O	..	84	84	9	9	.....	9	.....	.....	.....	.....	1	..	..
1236.	P 1	.....	L	..	60	60	10	5	5	10	1	.....	.....	.....	.....	.....	.....
1237.	P 1	.....	L	..	60	60	9	7	2	9	1	.....	.....	2	.....	Y	Y
1238.	P 1	.....	L	..	60	30	69	41	28	69	4	.....	.....	.....	1	..	..
1239.	P 1	.....	L	..	60	60	6	3	3	6	.....	.....	.....	.....	.....	.....	.....
1240.	.....	2	O	..	66	66	40	20	20	40	1	.....	.....	.....	1	.....	Y
1241.	4	.....	O	R	60	60	5	4	1	5	.....	.....	.....	.....	2	Y	Y
1242.	1	.....	L	..	48	48	8	7	1	8	1	.....	.....	1	1	..	..
1243.	2	.....	O	..	60	60	10	10	.....	10	.....	.....	.....	.....	1	..	..
1244.	2	1	O	..	60	60	50	30	20	50	.....	.....	.....	.....	.....	.....	.....
1245.	1	.....	L	..	60	60	5	2	3	5	.....	.....	.....	.....	.....	.....	.....
1246.	.....	1	O	..	60	60	30	27	3	30	4	.....	.....	.....	1	Y	Y
1247.	1	.....	L	..	60	60	16	4	12	16	.....	.....	.....	.....	1	..	..
1248.	1	.....	L	..	60	60	7	7	.....	7	1	.....	.....	.....	1	.....	Y

CHIPPEWA COUNTY.

Running number	DOORS.		ELEVATORS.				Machinery vats and pan guarded.	CLOSETS.		Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER.		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.		Properly provided.	Screened.						Steam.	Water.	Electric, Gas
1211.	O	N						N		G	32		1	1	75		

BAYFIELD COUNTY.

1212.		N						Y		G	52						
1213.	Y									G	30		3	2	500		
1214.	O						Y			G	32		3	2			

DUNN COUNTY.

1215.		N					Y	Y		G	50		3	2	140		
-------	--	---	--	--	--	--	---	---	--	---	----	--	---	---	-----	--	--

ROCK COUNTY.

1216.		N					Y	Y		G	52		1	1	150		
1217.	I								Y	G	52						
1218.	I									G	39						100
1219.										G	52						10
1220.	I		1	Y	D	Y			Y	G	52		1	1			7
1221.	I									G	52		1	1	125		30
1222.	O									G	20		2	2	110		
1223.	I		1	Y	D	Y		Y	Y	G	38		1	2	100		
1224.						Y				G	49		1	1	100		
1225.	O		2	Y	B	Y			N	G	45						12
1226.									Y	G	40		1				3
1227.	O		1	Y	G	Y				G	45		3	1	125		475
1228.	O									G	52		3	2	200		
1229.	I	N	1	Y	B	Y			Y	G	52						
1230.	I		5		G					G	52		4	1	150		
1231.	I									G	32						30
1232.	I	N							Y	G	52		1	1	15		
1233.	I		1	Y	D	Y				G	46						20
1234.	I		1		D					G	45						40
1235.	I		1					N	N	G	52		2	2	100		
1236.								Y	Y	G	52						
1237.	I									G	52						3½
1238.	O	N	1	Y		Y				G	35		1	1			
1239.										G	52		1	1	8		
1240.	I	N	1	Y	D					G	52		1	1	75		
1241.	I		1		D		Y	Y		G	50						50
1242.	I	N								G	52						
1243.	I									G	52						
1244.	I		1	Y	B				Y	G	50		1	1	18		
1245.										G			1	1	7		
1246.	I		1	Y		N				G	40		1	1	8		
1247.	I		1		D	Y			Y	G	52						4
1248.		N								G	52		1	1	10		

JEFFERSON.

Running number.	BUILDINGS.		PLANT.		HOURS PER WEEK.		EMPLOYEES.					STAIRWAYS.							
	1 to 2 stories.	3 or more stories.	Owned or leased.	Running or idle.	When running full time.	Date of inspection.	Full capacity.	Date of Inspection.					Number of fire escapes.	Outside.	Inside.	Openings guarded.	Have hand rails.		
								Male.	Female.	Total.	Between 14 and 18 years.	Under 14 years.							
1249.	P	1	.....	L	R	60	60	5	3	.....	3	.....	.....	.....	.....	.....	.....	.....	.....
1250.		3	.....	O	..	60	60	26	26	.....	26	.....	.....	.....	.....	.....	.....	.....	.....
1251.		5	.....	O	..	60	60	115	78	24	102	.....	4	.....	.....	.....	.....	.....	.....
1252.		2	.....	L	..	60	60	12	9	.....	9	.....	.....	.....	.....	.....	.....	.....	.....
1253.		1	.....	O	..	60	60	5	3	.....	3	.....	.....	.....	.....	.....	.....	.....	.....
1254.		4	.....	O	..	60	60	5	3	.....	3	.....	.....	.....	.....	.....	.....	.....	.....
1255.	P	1	.....	L	..	60	60	6	5	.....	1	.....	6	.....	.....	.....	.....	.....	.....
1256.		1	.....	L	..	60	60	51	1	.....	1	.....	1	.....	.....	.....	.....	.....	.....
1257.		4	.....	O	..	60	60	57	57	.....	57	.....	3	.....	.....	.....	.....	.....	.....
1258.		3	.....	O	..	60	60	14	9	.....	5	.....	14	.....	2	.....	.....	.....	.....
1259.		1	.....	O	..	66	66	2	2	.....	2	.....	2	.....	.....	.....	.....	.....	.....
1260.	P	1	.....	L	..	60	60	5	5	.....	5	.....	5	.....	.....	.....	.....	.....	.....
1261.		5	.....	O	..	60	60	10	6	.....	6	.....	.....	.....	.....	.....	.....	.....	.....
1262.		2	.....	O	..	60	60	20	15	.....	20	.....	2	.....	.....	.....	.....	.....	.....
1263.	P	1	.....	O	..	60	60	11	11	.....	11	.....	3	.....	.....	.....	.....	.....	.....
1264.		2	.....	O	..	66	60	5	3	.....	3	.....	.....	.....	.....	.....	.....	.....	.....
1265.		2	.....	O	..	60	60	6	2	.....	2	.....	.....	.....	.....	.....	.....	.....	.....
1266.		4	.....	O	..	60	60	35	24	.....	24	.....	.....	.....	.....	.....	.....	.....	.....
1267.		3	.....	O	..	60	60	8	4	.....	4	.....	.....	.....	.....	.....	.....	.....	.....
1268.		4	.....	O	..	60	60	14	10	.....	10	.....	.....	.....	.....	.....	.....	.....	.....
1269.		7	.....	O	..	60	60	20	10	.....	10	.....	.....	.....	.....	.....	.....	.....	.....
1270.		3	.....	O	..	60	60	50	27	.....	4	.....	31	.....	4	.....	.....	.....	.....

KAUKAUNA.

1271.	1	.....	L	I	144	.....	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1272.	22	.....	O	R	60	60	216	.....	216	.....	216	.....	.....	.....	.....	.....	.....	.....	.....
1273.	2	.....	O	..	72	72	15	.....	8	.....	8	.....	.....	.....	.....	.....	.....	.....	.....
1274.	1	.....	O	..	60	60	6	.....	2	.....	2	.....	.....	.....	.....	.....	.....	.....	.....
1275.	2	.....	O	..	60	60	5	.....	2	.....	2	.....	.....	.....	.....	.....	.....	.....	.....
1276.	5	.....	O	..	144	144	50	.....	44	.....	44	.....	.....	.....	.....	.....	.....	.....	.....
1277.	5	.....	O	..	60	60	15	.....	9	.....	9	.....	.....	.....	.....	.....	.....	.....	.....
1278.	4	.....	O	..	60	54	30	.....	10	.....	10	.....	1	.....	.....	.....	.....	.....	.....
1279.	1	.....	L	..	60	60	10	.....	5	.....	1	.....	6	.....	.....	.....	.....	.....	.....
1280.	1	.....	L	..	60	60	5	.....	3	.....	3	.....	.....	.....	.....	.....	.....	.....	.....
1281.	4	.....	O	R	144	144	110	.....	78	.....	32	.....	110	.....	.....	.....	.....	.....	.....
1282.	2	.....	O	..	60	66	5	.....	5	.....	5	.....	.....	.....	.....	.....	.....	.....	.....
1283.	3	.....	O	..	60	60	10	.....	4	.....	4	.....	.....	.....	.....	.....	.....	.....	.....
1284.	8	.....	O	..	144	144	87	.....	73	.....	14	.....	87	.....	.....	.....	.....	.....	.....
1285.	1	.....	O	..	60	66	5	.....	4	.....	4	.....	.....	.....	.....	.....	.....	.....	.....
1286.	6	.....	O	..	144	144	50	.....	50	.....	50	.....	.....	.....	.....	.....	.....	.....	.....

KESHENA.

1287.
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

KENOSHA.

1288.	1	.....	O	R	60	60	463	.....	454	.....	.....	.....	454	.....	.....	.....	.....	.....	.....
1289.	19	.....	O	..	60	60	175	.....	175	.....	.....	.....	175	.....	.....	.....	.....	.....	.....
1290.	8	.....	O	..	60	60	200	.....	144	.....	6	.....	150	.....	.....	.....	.....	.....	.....
1291.	5	.....	O	..	60	60	300	.....	50	.....	250	.....	300	.....	.....	.....	.....	.....	.....
1292.	1	.....	L	..	60	60	10	.....	3	.....	7	.....	10	.....	.....	.....	.....	.....	.....

JEFFERSON COUNTY.

Running number	DOORS.		ELEVATORS.				Machinery rats and pan guarded.	CLOSETS.		Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE • POWER		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.		Properly provided.	Screened.						Steam.	Water.	Electric, Gas.
1249.							Y			G	52		1	1	6		
1250.	Y	N	1	Y	B	Y				G	52		1	1	80		
1251.	I		1		D			Y	Y	G	52		1	1	40		
1252.	I									G	40		1	1	12		
1253.	I									G	52		1	1	75	115	
1254.	I									F	52		1	1	20		
1255.	I									G	52			1	4		1
1256.	I									G	52		1	1	6		
1257.										G	26		1	1	60		
1258.	I							Y	Y	G	52		1		6		
1259.	I									G	52		2	1	125		
1260.	I							Y		G	52						
1261.	I									G	26		1			75	
1262.	I									G	20		1	1	35		
1263.	I									G	52						
1264.	I						Y			G	52		1	1	30		
1265.										G	52		1	1	15		
1266.	S	N	3	Y	G	Y	Y			G	52		1	1	20		
1267.	S									F	52		1	1	40		
1268.	S									G	52		3	2	60		
1269.	I	N								G	52		1	1	20		
1270.	S		1	Y	D	Y				G	45	1	1	1	160		

OUTAGAMIE COUNTY.

1271.	I	N					Y			F						400	
1272.	I		1	Y	B	Y	Y	Y		G	52		4	1	60		
1273.	I									G	52					550	
1274.	I									G	52		1	1	6		
1275.										G	52		2	1	180	200	
1276.	I									F	52		4	1	250	100	
1277.	I						N			G	52		1	1	35	50	
1278.	I						Y			G	52		1	1	12		
1279.	I									G	52		1	1	6		
1280.	I							Y		G	52		1	1	8		
1281.	I		2	Y	T	Y			Y	G	52		2			1500	
1282.	I									G	52		1			300	
1283.	O									G	52					50	
1284.	S		2	Y	T	Y		Y	Y	G	52		3	2	200	275	
1285.	I									G	52					80	
1286.	I		3	Y	T	Y				G	52		2	4	350	800	

SHAWANO COUNTY.

1287.

KENOSHA COUNTY.

1288.	S		1	Y	D	Y	Y	Y		G	52		7	3	450		
1289.	I		5	Y	B					G	40		3	1	300		
1299.	I									G	40		6	7	350		
1291.	S		1	Y	G	Y			Y	G	50		4	5	250		
1292.										G	52		1	1	10		

KENOSHA.

Running number.	BUILDINGS.		PLANT.		HOURS PER WEEK.		EMPLOYEES.					STAIRWAYS.					
	1 to 2 stories.	3 or more stories.	Owned or leased.	Running or idle.	When running full time.	Date of inspection.	Full capacity.	Date of Inspection.					Number of fire escapes.	Outside.	Inside.	Openings guarded.	Have hand rails.
								Males	Female.	Total.	Between 14 and 18 years.	Under 14 years					
1293.		2	O	R	60	60	12	12	.....	12	.....	.....	.....	1	1	Y	Y
1294.	P	1	L	..	54	54	8	.....	1	.....	.....	.....	.....	1	1	Y	..
1295.		5	O	..	60	60	50	33	.....	33	.....	.....	.....	1	1	Y	..
1296.	P	1	L	..	60	60	10	7	.....	7	.....	.....	.....	1	1	Y	..
1297.	P	1	L	..	54	54	9	7	.....	2	.....	.....	.....	1	1	Y	Y
1298.		1	L	..	60	60	10	4	.....	6	.....	.....	.....	.....	.....	.....	.....
1299.		1	O	..	60	60	268	250	.....	18	.....	.....	.....	.....	.....	.....	.....
1300.		2	O	..	60	60	60	5	.....	5	.....	.....	.....	.....	.....	.....	.....
1301.		3	O	..	60	60	16	16	.....	16	.....	.....	.....	.....	.....	.....	.....
1302.		4	O	..	60	60	10	10	.....	10	.....	.....	.....	1	1	Y	Y
1303.		14	O	..	60	60	450	340	.....	340	.....	.....	.....	.....	.....	.....	.....
1304.		5	O	..	60	60	300	300	.....	300	.....	.....	.....	.....	.....	.....	.....
1305.		1	L	..	60	60	12	8	.....	8	.....	.....	.....	.....	.....	.....	.....
1306.		3	O	..	60	60	60	15	.....	15	.....	.....	.....	.....	.....	.....	.....
1307.		1	L	..	60	60	44	36	.....	8	.....	.....	.....	.....	.....	.....	.....

KEWAUNEE.

1308.		5	O	R	60	60	15	5	.....	5	.....	.....	.....	.....	.....	.....	.....
1309.		4	O	..	60	60	40	18	.....	18	.....	.....	.....	.....	.....	.....	.....
1310.		1	O	..	60	60	5	3	.....	1	.....	.....	.....	.....	.....	.....	.....
1311.		3	O	..	60	60	5	4	.....	4	.....	.....	.....	.....	.....	.....	.....
1312.		2	O	I	.....	.....	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1313.	P	2	L	R	60	60	6	3	.....	3	.....	.....	.....	.....	.....	.....	.....
1314.		1	L	..	60	60	5	3	.....	2	.....	.....	.....	.....	.....	.....	.....
1315.		2	O	..	60	60	20	12	.....	12	.....	.....	.....	.....	.....	.....	.....
1316.		3	O	..	144	144	90	45	.....	45	.....	.....	.....	.....	.....	.....	.....
1317.		1	O	..	60	60	5	3	.....	3	.....	.....	.....	.....	.....	.....	.....

KIEL.

1318.		2	O	R	60	60	52	52	.....	52	.....	.....	.....	.....	.....	.....	.....
1319.		7	O	..	60	60	50	50	.....	50	.....	.....	.....	14	2	.....	.....

KILBOURN.

1320.		4	O	R	60	60	12	9	9	1	Y	Y	Y
-------	--	---	---	---	----	----	----	---	-------	---	-------	-------	-------	---	---	---	---

KIMBALL.

1321.		8	O	R	60	66	25	15	15	2	3	Y	Y
-------	--	---	---	---	----	----	----	----	-------	----	-------	-------	-------	---	---	---	---

KIMBERLY.

1322.		15	O	R	144	144	163	163	7	170	10
-------	--	----	---	---	-----	-----	-----	-----	-------	---	-----	----	-------	-------	-------	-------	-------

KENOSHA COUNTY—Continued.

Running number	DOORS.		ELEVATORS.				CLOSETS.		Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER.		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.	Machinery vats and pau guarded.	Properly provided.						Screened.	Steam.	Water.	Electric, Gas
1293.	I	N					Y	Y	G	47	1	1	50			
1294.	I							Y	G	52		1	3			
1295.	S		1	Y	D	Y			G	49	1	2	110			
1296.									G	52		1	4		1	
1297.	I								G	52		2				
1298.	I								G	24		1	10			
1299.	S		1	Y	D	Y	Y		G	50	4	1	375			
1300.									G	52						
1301.	O								G	30		2	150			
1302.	S							Y	G	50		1	7			
1303.	S		2	Y	B	Y	Y	N	G	45	4	2	150			
1304.	S								G	52	4	3	400			
1305.									G	50	1	1	15			
1306.	S								G	52	1	1	45			
1307.	I								G	50	1	1	17			

KEWANEE COUNTY.

1308.	S	N					Y	Y	G	52	1	1	20		
1309.	I								F	45	1	1	15		
1310.	I								G	52	1	1	3		
1311.	O						N		G	52	1	1	10		
1312.	I						Y		G		1	1	250		
1313.	I	N							G	52					
1314.	I							Y	G	52					
1315.	O						Y	Y	G	40	1	1	30		
1316.	I		1	Y	B	Y		Y	G	52	1	1	93		
1317.	I							Y	F	26	1	1	10		

MANITOWOC COUNTY.

1318.	I	N	2	Y	B	Y	N		G	52	2	1	125		
1319.	S								F	52	2	1	35		

COLUMBIA COUNTY.

1320.	I	N				Y			F	52	1	1	12		
-------	---	---	--	--	--	---	--	--	---	----	---	---	----	--	--

IRON COUNTY.

1321.	S	N				Y	Y		G	45	2	1	100		
-------	---	---	--	--	--	---	---	--	---	----	---	---	-----	--	--

OUTAGAMIE COUNTY.

1322.	S	N	4	Y	T	Y	Y	Y	G	52	11	1	200	3000	
-------	---	---	---	---	---	---	---	---	---	----	----	---	-----	------	--

JEFFERSON COUNTY.

Remaining number	DOORS.		ELEVATORS				Machinery vats and pan guarded.	CLOSETS.		Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.		Properly provided.	Screened.						Stream.	Water.	Electric, Gas.
1323.	S	N					N			G	52		1	1	45		
1324.	I		2	Y	D	Y	Y			G	52		2	1	125		
1325.	I						Y			G	52				5		
1326.	I									G	26		1	1	8	12	

BARRON COUNTY.

1327.	S	N					Y	Y		F	18		3	2	90		
-------	---	---	--	--	--	--	---	---	--	---	----	--	---	---	----	--	--

OCONTO COUNTY.

1328.	I	N					Y	Y			52		1	1	100		
-------	---	---	--	--	--	--	---	---	--	--	----	--	---	---	-----	--	--

MONROE COUNTY.

1329.																	
-------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

OUTAGAMIE COUNTY.

1330.	I	N					Y	Y		G	46		1		3000		
-------	---	---	--	--	--	--	---	---	--	---	----	--	---	--	------	--	--

LA CROSSE COUNTY.

1331.	O	N					Y	Y	Y	G	52	N		1			5
1332.	I		2	Y	D	Y				G	44		1	1	15		
1333.	O									G	52	N	1	1	6		
1334.	I									G	52		1	1	12		
1335.	I									G	52		1	2	85		
1336.	I									G	52		5	2	45		
1337.										G	52		2	1	60		
1338.	I									G	32		7	3	550		
1339.	O		1	Y	D	Y				G	52		5	1	75		
1340.									Y	G	52						
1341.	O		1	Y	B	Y				G	52						
1342.	S									G	12		8	1	350		
1343.	I									G	40		1	1	8		
1344.	O									G	50		1	1	25		
1345.	O		1	Y	D	Y			Y	G	52						
1346.										G	52		1	1	7		
1347.	O		1	Y	D	Y				G	46						
1348.	I									G	52		1	1			14
1349.	O		1						Y	G	52		1	1	40		
1350.	O									G	14		6	2	150		
1351.	S						Y		Y	G	18		3	1	80		
1352.	O									G	52		3	3	275		
1353.	I									G	52			1			
1354.	I								Y	G	52						
1355.	O									G	52		3	5	200		

LA CROSSE.

Running number.	BUILDINGS.		PLANT.		HOURS PER WEEK.		EMPLOYEES.					Number of fire escapes.	STAIRWAYS.				
	1 to 2 stories.	3 or more stories.	Owned or leased.	Running or idle.	When running full time.	Date of inspection.	Full capacity.	Date of Inspection.					Outside.	Inside.	Openings guarded.	Have hand rails.	
								Male.	Female.	Total.	Between 14 and 18 years.						Under 14 years.
1356.	6	1	O	R	60	60	177	167	10	177	7	5	2	2	Y	Y	
1357.	1	1	O	..	60	60	60	7	7	60	7	1	1	1	..	..
1358.	4	1	O	..	48	48	45	35	5	35	3	1	1	..	..	..
1359.	1	1	O	..	60	60	20	5	13	18	1	1	1	..	..	..
1360.	3	2	O	..	48	48	75	45	5	45	1	2	1	3	..	..
1361.	3	3	O	..	54	54	15	15	..	15	..	..	..	1	..	..
1362.	P 3	3	O	..	54	54	35	15	5	20	2	X	X	1	1	..	
1363.	3	3	O	..	60	60	8	8	..	8	..	..	..	1	..	..
1364.	2	1	O	..	115	115	38	36	2	38	..	..	..	..	..	..
1365.	1	1	O	..	168	168	5	5	..	5	..	..	..	..	..	..
1366.	1	1	O	..	48	48	5	5	..	5	..	..	..	..	..	..
1367.	1	1	O	..	60	60	50	20	10	30	..	..	..	4	Y	Y
1368.	1	1	O	..	168	168	13	12	1	13	..	..	..	..	..	..
1369.	5	5	O	..	60	60	12	12	..	12	..	..	..	2	Y	Y
1370.	5	5	O	..	168	168	9	9	..	9	..	..	..	..	..	..
1371.	2	2	O	..	45	45	125	20	105	125	50	2	3	Y	Y	Y	
1372.	2	2	O	..	120	120	16	15	1	16	..	1	4	Y	Y	Y	
1373.	6	6	O	..	60	60	221	210	11	221	..	..	3	Y	Y	Y
1374.	P 1	2	L	..	60	60	8	3	6	8	..	1	1	Y	..	..
1375.	2	2	O	..	60	60	75	75	..	75	..	2	3	..	..	..
1376.	1	1	L	..	66	66	23	22	1	23	..	..	2	..	..	..
1377.	1	1	L	R	60	60	6	6	..	6	..	..	2	Y	Y	Y
1378.	1	1	L	..	60	60	9	5	..	5	4	..	..	..	..	..
1379.	1	1	L	..	48	48	50	9	30	39	..	1	4	Y	..	..
1380.	2	2	L	..	60	60	25	12	2	14	..	..	2	Y	..	..
1381.	1	1	L	..	60	60	5	5	..	5	..	..	1	..	..	..
1382.	4	1	L	..	48	48	6	3	..	3	..	1	1	..	..	..
1383.	1	1	L	I	60	60	..	..	..	..	..	..	..	..	..	..
1384.	4	2	O	R	144	144	45	45	..	45	..	2	3	..	..	..
1385.	1	1	L	..	60	60	50	12	1	13	..	1	2	..	..	..
1386.	10	3	O	..	60	60	70	55	6	61	..	2	2	..	..	..
1387.	1	1	O	I	6	6	16	..	..	..	..	..	2	..	..	..
1388.	1	1	O	R	60	60	12	11	1	12	..	..	2	Y	..	..
1389.	4	4	O	..	60	60	5	5	..	5	..	..	2	..	..	..
1390.	4	4	O	..	60	48	30	13	..	13	..	1	1	..	..	..
1391.	6	1	L	..	48	48	70	52	18	70	6	1	2	..	..	..
1392.	6	3	O	..	60	48	350	72	..	72	3	2	2	..	..	..
1393.	1	1	L	..	60	60	10	4	3	7	4	..	1	..	..	..
1394.	1	1	O	..	60	60	21	19	2	21	3	1	1	..	..	..
1395.	1	2	O	..	50	50	140	50	90	140	..	2	3	..	..	..
1396.	8	3	O	..	60	60	300	300	..	300	10	2	3	..	..	..
1397.	2	3	O	..	60	60	150	100	..	100	..	2	5	..	..	..
1398.	5	5	O	..	60	60	35	35	..	35	4	1	1	..	..	..
1399.	1	1	O	..	54	54	10	6	..	6	..	..	..	..	..	..
1400.	P 1	1	L	..	60	60	6	6	..	6	1	..	..	..	..	..
1401.	1	P 1	L	..	60	48	25	1	20	21	3	1	2	Y	Y	Y	
1402.	1	1	L	..	60	60	11	4	5	9	..	..	1	..	..	..
1403.	5	5	O	..	60	60	80	75	5	80	5	..	3	..	..	..
1404.	1	P 1	L	..	54	54	5	5	..	5	2	..	1	..	..	..
1405.	1	1	O	..	48	48	11	8	..	8	..	..	1	..	..	..
1406.	9	9	O	..	60	60	85	20	..	20	..	..	1	..	..	..
1407.	2	2	O	..	66	66	5	5	..	5	..	..	5	..	..	..

LA CROSSE COUNTY.

Running number.	DOORS.		ELEVATORS.				CLOSETS.		Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER.		
	Swing in or out.	Locked during office hours.	Number.	Condition of cablr's good.	Kind of doors.	Openings guarded.	Machinery vats and pan guarded.	Properly provided.						Screened.	Steam.	Water.	Electric, Gas
1356.	S	N					Y	Y	G	8	1	7	5	650		
1357.	I						Y	Y	G	52		1	1	125		
1358.	O								G	52		1	1	25		
1359.	I		1	Y	T	Y			Y	52						
1360.	O		2		D				G	52		2	1	80		
1361.	O		1	Y	D				G	52		1	1	35		
1362.	I		1	Y	D			Y	G	48		1	1			10
1363.										52		2	2	275		
1364.										52		2	1	250		
1365.		N					Y			52		4	4	75		
1366.	O		2	Y	D	Y		Y	G	52		1	1	30		
1367.	I		1	Y	D			Y	G	52		1	1	25		
1368.	O								G	52		3	4	700		
1369.	O								G	52		1	1			10
1370.									F	52		3	2	12		
1371.	O		2	Y	D	Y		Y	G	38		1	1	60		
1372.	O		1	Y	D				G	24		1	1	120		
1373.	S								G	20		10	3	700		
1374.	I	N							G	52						
1375.	O		2	Y	D	Y		Y	G	52		1	3	100		
1376.	O		1	Y	D	D	Y	Y	Y	52		1	1			7½
1391.	O	N	1	Y	D	Y	Y	Y	G	52	N	1	1	24		
1377.	O		1	Y	B	Y		Y	G	52		1	1	15		
1378.	I		1	Y	D				G	52		1				8
1379.	O		1						G	52						
1380.	O		1						G	52						
1381.	O				D	Y	Y		G	52		1	1	80		
1382.			1	Y	D			Y	G			1	1	35		
1383.	O		2						G	52		3	1	450		
1384.	O							Y	G	51		1	1			7½
1385.	I		1	Y			Y		G	52		3	4	190		
1386.	O								G	52			1			1
1387.					T	Y		Y	G	52		1	1			6
1388.	O		1	Y					G	52		1	1	20		
1389.	O				D	Y	Y		G	52		1	1	50		
1390.	O								G	48						
1392.	I	N						Y	G	26		2	2	800		
1393.	O							Y	G	44			1			10
1394.	O		1	Y	G	Y			G	52	N	1	1	12		
1395.	O		2		D				G	52			1			4
1396.	I								G	32		6	2	600		
1397.	S		3	Y	D	Y			G	46	1	4	1	100		
1398.	I								G	52	N	2	1	25		
1399.									G	45						
1400.									G	52	N					
1401.	O							Y		43						
1402.	O									52		1	1			
1403.										32						
1404.	I		1	Y	B	Y		Y	G	52						
1405.	I						Y		G	52		1	1			10
1406.	O		1	Y	B	Y			G	22		1	1	75		
1407.	O								G	52		1	1	60		

MADISON.

Running number.	BUILDINGS.		PLANT.		HOURS PER WEEK.		EMPLOYEES.					STAIRWAYS.						
	1 to 2 stories.	3 or more stories.	Owned or leased.	Running or idle.	When running full time.	Date of inspection.	Full capacity.	Date of Inspection.					Number of fire escapes.	Outside.	Inside.	Openings guarded.	Have hand rails.	
								Male	Female	Total	Between 14 and 18 years.	Under 14 years						
1448.	5		O	I	60	60	20	5			5					1	Y	Y
1449.	P 1	P 1	L	R	60	60	6	6			6							
1450.	P 1		L		60	60	10	7	3		10	1						
1451.	P 1	P 1	L		53	53	15	12	2		14					1	Y	Y
1452.	3		O		60	60	20	7	1		8		1	1	1	2		
1453.	1		L		60	60	6	3			3							
1454.	4		O		60	60	15	11			11					2	Y	Y

MANAWA.

1455.	P 1		L	R	60	60	3	2	1		3							
1456.	2	1	O		60	60	4	3			3					2	Y	Y
1457.	4		O	I	60	60	65	35			35	2						

MANITOWOC.

1458.	2		O	R	60	60	25	16			16	1				11		
1459.	P 1		L		60	60	8	6			6	1			1	1	Y	Y
1460.	6		O		60	48	150	4			4					2		
1461.	1		O		60	60	5	1			1					1		
1462.	3		O		60	60	20	4	8		12	2				1		
1463.	2		O		60	60	20	11			11				1			
1464.	3		O		60	60	5	2			2				1	1		
1465.	3		O		60	60	13	13			13					1		
1466.	6		O		144	144	90	45	45		90	2				2		
1467.	7		O		60	60	30	30			25				1	1		
1468.	2		O		60	60	100	75			75							
1469.	1		O		72	72	5	5			5					1	Y	Y
1470.	6		O		144	144	30	27	3		30				2	1		
1471.	1		O	I	144	144	4	4			4							
1472.	1		O	R	60	60	5	5			5					1	Y	Y
1473.	3	1	O		60	60	170	170			170	1		1				
1474.	3		O		60	60	30	30			30							
1475.	1	1	O		60	30	7	6			6					1	Y	Y
1476.	P 1		L		60	60	12	2	5		7							
1477.	3		O		60	60	10	8			8					1	Y	Y
1478.	5		O		60	60	25	25			25					3		
1479.	2		O		60	60	6	6			6					1		
1480.	3	3	O	R	60	60	70	70			70		1			1		
1481.	2	1	O	R	60	60	14	14			14					2		
1482.	3		O		60	60	6	5			5					1		
1483.	7		O		59	59	80	59			59					3		
1484.	P 1		L		60	60	7	1	6		7					1		
1485.	2		O		60	60	7	7			7	1				1		
1486.	2	2	O		60	60	16	2			2		1			1		
1487.	3		O		60	39	8	3			3					1		

DANE COUNTY—Continued.

Running number	DOORS.		ELEVATORS.				CLOSETS.			Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER.		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.	Machinery vats and pan guarded.	Properly provided.	Screened.						Steam.	Water.	Electric, Gas
1448.	O	N					Y			G	40		1	1	20		
1449.	I						Y			G							
1450.	I								Y	G	52						
1451.	I									G	52		1	1	10		
1452.	O									G	36						5
1453.										G	50						
1454.	O	N								G	52						14

WAUPACA COUNTY.

1455.	I	N					Y	Y		G	52						
1456.	I						N			G	52	1	1	1	10	60	
1457.	I						N			G	25		1	1	45	150	

MANITOWOC COUNTY.

1458.	I	N					Y	Y		G	52		1	1	40		
1459.	O									G	52				HP		
1460.	S						Y			G	40		2	4	120		
1461.	I									F	52		1	1	15		
1462.	I							Y	Y	G	52		1	1	25		
1463.	I									G	52		1	1	10		
1464.	S									G	52		1	1	24		
1465.	I									G	52		1	1	15		
1466.	S		2	Y	B	Y		Y	Y	G	32		2	1	40		
1467.	S		1	Y	B		N			G			1	1	80		
1468.	I						Y			G	52		1	1	95		
1469.	I	N								F	52		3	1	150		
1470.	I									G	52		1	1	40		
1471.	I									G	16				65		
1472.	I	N					Y			G	52		1	1	3½		
1473.	S		2	Y	D	Y		Y		G	52		3	2	240		
1474.	O									G	52		1	1	25		
1475.	I									G	26				80		
1476.	I							Y		G			1	1	8		
1477.	I									G	52		1	1	15		
1478.	I						Y			G	52		1	1	25		
1479.	I		1	Y	B	Y				F	52		1	1	20		
1480.	I									G	52		3	3	140		
1481.	I		1	Y	D	Y		Y		G	52		1	1	25		
1482.	I									G	52		1	1	17		
1483.	I		1	Y	B	Y	Y	Y		G	52		2	1	150		
1484.	I								Y	G	52		1	1	6		
1485.	I									G	52		1	1	40		
1486.	I		1	Y	B	Y		Y		G	52				HP		
1487.	I									F	13		1	1	24		

MARATHON COUNTY.

Running number	DOORS.		ELEVATORS				Machinery vats and pan guarded.	CLOSETS.		Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER.		
	Swing in or out.	Locked during office hours.	Number.	Condition of cable's good.	Kind of doors.	Openings guarded.		Properly provided.	Screened.						Steam.	Water.	Electric, Gas
1488.	O	N					Y			G	16		3	1	60		
1489.	Z									G	26		2	1	70		
1490.	O									G	52		1	1	45		
1491.	O									G	16		1	1	50		
1492.	S									G			2	1	65		
1493.	I	N					Y			G	52		1	1	35		
1494.										G	21		1	1	65		

OCONTO COUNTY.

1495.	I	N					Y	Y		G	52		2	2	75		
1496.	O								Y	G	52		1	1			
1497.	O									G	30		5	2	285		
1498.	O									G	26				50		
1499.	O									G	52		1	1	20		
1500.	I		2	Y	D	Y		Y		G	52	2	1	1	75		
1501.	I									G	30		7	2	340		
1502.	I							Y	Y	G	52				3		
1503.	I									G	52					160	
1504.	I									G	52		5	2	600		
1505.	I									G	30	1	7	3	275		
1506.	I		1	Y	D	Y				G	52		1	1	125		
1507.	I		1		B					F	52		2	1	25	200	
1508.	S		2		B			Y	Y	G	52		7	2	250	200	
1509.	S									G	52		1	1	65		
1510.	S									G	30	1	11	1	176		
1511.	S									G	39		6	1	600		
1512.	I							Y	Y	G	52			E	1		5
1513.										G	52		1	1	15		
1514.	S						Y			G	30	1	5	2	600		
1515.	I									G	26		7	3	330		
1516.	S									G	26		4	1	250		
1517.	I							Y		G	52		E	1			3
1518.	I									G	52		1	1	13		
1519.	I									G	26		8	2	250		

SHAWANO COUNTY.

1520.	I	N					Y			G	52					40	
1521.	S									G	12		1	1	40	35	
1522.										G	4		1	1	25		
1523.	S									G	52		1	1	35		
1524.										G	5		1	1	20		
1525.	I						N			G	52		1	1	1	35	

WOOD COUNTY.

1526.		N						Y		G	52		1	1	6		
1527.	O						N			G	52	1	1	1	35		
1528.	O									G	52						
1529.	O		1	Y	B	Y		Y		G	52		1	1	25		
1530.	S								Y	G	52		1	1	50		

MARSHFIELD.

Running number.	BUILDINGS.		PLANT.		HOURS PER WEEK.		EMPLOYEES.					Number of fire escapes.	STAIRWAYS.			
	1 to 2 stories.	3 or more stories.	Owned or leased.	Running or idle.	When running full time.	Date of inspection.	Date of Inspection.						Outside.	Inside.	Openings guarded.	Have hand rails.
							Full capacity.	Male.	Female.	Total.	Between 14 and 18 years.					
1531.	7	1	O	R	60	60	13	13	...	13	...	...	1	2	Y	Y
1532.	3	1	O	..	60	60	50	50	...	50	10	...	...	2	..	..
1533.	1	...	O	..	60	60	5	3	...	3	...	...	...	..	..	..
1534.	4	...	O	..	120	120	34	30	...	30	4	...	...	..	..	..
1535.	5	...	O	..	144	144	6	6	...	6	...	...	...	..	..	..
1536.	1	...	L	..	60	60	6	3	...	3	1	...	...	..	..	..
1537.	7	...	O	..	60	60	80	75	...	75	10	...	...	1	Y	Y
1538.	2	...	O	..	60	60	8	8	...	8	...	...	...	..	..	..
1539.	3	...	O	..	60	60	60	60	...	60	...	...	...	..	..	..
1540.	...	2	O	..	60	60	5	5	...	5	...	...	2	2	Y	Y
1541.	4	...	O	..	60	60	60	55	...	55	...	...	2	1	..	..
1542.	6	...	O	..	60	66	175	175	...	175	45	...	2	2	..	..
1543.	7	...	O	..	60	60	44	44	...	44	...	...	...	..	..	..

MAZOMANIA.

1544.	2	1	O	I	60	...	8	...	...	...	...	...	2	Y	Y	
1545.	4	...	O	R	60	60	5	5	...	5	1	...	...	1	..	..
1546.	3	...	O	I	60	...	21	...	...	...	...	...	1	..	..	..
1547.	1	...	O	R	60	60	2	2	...	2	...	...	...	..	..	..

MASON.

1548.	15	...	O	R	60	60	146	146	...	146	5	...	3	2	Y	Y
-------	----	-----	---	---	----	----	-----	-----	-----	-----	---	-----	---	---	---	---

MATTOON.

1549.	4	...	O	R	66	66	25	13	...	13	2	...	...	...	...	...
1550.	2	...	O	..	66	66	40	40	...	40	6	...	...	1	Y	Y
1551.	3	...	O	..	66	66	27	27	...	27	...	...	...	2	..	..
1552.	2	...	O	..	66	66	23	23	...	23	4	...	...	1	..	..
1553.	5	...	O	..	60	60	263	250	...	250	6	...	3	4	..	..

MAUSTON.

1554.	...	2	O	R	66	144	8	7	...	7	2	Y	Y
-------	-----	---	---	---	----	-----	---	---	-----	---	-----	-----	---	---	---

MAYVILLE.

1555.	5	...	O	R	60	60	25	4	5	9	3	...	...	...	...	...
1556.	1	3	O	..	60	60	17	15	...	15	...	...	...	2	Y	...
1557.	1	...	O	..	60	60	12	7	...	7	...	...	...	1	..	Y
1558.	1	...	O	..	70	70	90	90	...	90	...	...	...	...	...	...

MEDFORD.

1559.	P	1	...	L	R	60	60	4	3	1	4	...	...	...	...	...
1560.		6	...	O	..	60	60	50	20	...	20	5	...	...	1	...
1561.	P	1	...	L	..	60	60	3	2	1	3	1	...	...	...	...
1562.		1	...	O	..	60	60	3	3	...	3	...	...	...	...	...
1563.		1	...	O	..	60	60	8	8	...	8	...	...	...	...	...
1564.		5	...	O	..	60	60	157	157	...	157	...	3	4	Y	Y

WOOD COUNTY—Continued.

Running number	DOORS.		ELEVATORS				Machinery vats and pan guarded.	CLOSETS.		Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER		
	Swing in or out.	Locked during office hours.	Number.	Condition of cable & good.	Kind of doors.	Openings guarded.		Properly provided.	Screened.						Steam.	Water.	Electric, Gas.
1531.	S	N					N			G	52		2	1	15		
1532.	Z		1	Y	B	Y	Y			G	26		1	1	80		
1533.	Z									G	52		1	1	6		
1534.	Z									G	52		2	1	45		
1535.	C									G	52		2	2	160		
1536.	O							N		G	52		1	1	3		
1537.	Z									G	52		2	2	190		
1538.	Z									G	52		8	3	400		
1539.	Z	N								G	52						
1540.	C									G	50						
1541.	S									G	48		4	1	150		
1542.	C		3	Y	D	Y				G	52		4	1	260		
1543.	S									G	40		1	1	60		

DANE COUNTY.

1544.	I	N					Y			G	12		1	1	55	75	
1545.	I									G	52		1	1	12		
1546.	O							Y		G	4		1	1	35		
1547.	I									G	52		1	1	50		

BAYFIELD COUNTY.

1548.	O	N					Y			G	52		12	5	675		
-------	---	---	--	--	--	--	---	--	--	---	----	--	----	---	-----	--	--

SHAWANO COUNTY.

1549.	S	N						Y		G	32		2	1	80		
1550.	Z									G	52				30		
1551.	Z									G	52		3	1	160		
1552.	I		1	Y	B	N	Y			G	52	1	2	2	65		
1553.	S		1		B		N	Y		G	50		5	3	250		

JUNEAU COUNTY.

1554.	I						Y	Y	Y	Y	G	52		1	1	80	100
-------	---	--	--	--	--	--	---	---	---	---	---	----	--	---	---	----	-----

DODGE COUNTY.

1555.	I	N					Y	Y	Y	Y	G	25		1	1	60	
1556.	I									G	43		1	1	60		
1557.	S						Y			G	51		1	1	16		
1558.										G	30		7	2	800		

TAYLOR COUNTY.

1559.		N					Y			G	52				HP		
1560.								Y	Y	G	40		3	2	100		
1561.		N								G	52						
1562.										G	52						
1563.									Y	G	48		1	1	20		
1564.							Y			G	52		6	6	300		

FACTORY INSPECTION.

OUTAGAMIE COUNTY.

Running number	DOORS.		ELEVATORS.				Machinery vats and pan guarded.	CLOSETS.		Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.		Properly provided.	Screened.						Steam.	Water.	Electric, Gas.
1565.	O	N	.....	.....	.....	.....	Y	.....	.....	G	26	.....	1	1	60	.....	.....
1566.	I	..	.....	.....	.....	.....	.....	.....	.....	G	52	.....	1	1	10	.....	.....
1567.	I	..	.....	.....	.....	.....	N	.....	.....	G	52	.....	1	1	10	.....	.....

ASHLAND COUNTY.

1568.	O	N	Y	G	12	8	2	400
-------	---	---	-------	-------	-------	-------	-------	-------	-------	---	-------	---	----	-------	---	---	-----	-------	-------

WINNEBAGO COUNTY.

1569.	I	N	1	Y	B	Y	Y	Y	Y	G	.....	.....	2	2	300	.....	.....
1570.	S	..	2	..	D	..	..	..	..	G	52	.....	7	3	800	200	.....
1571.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	21	.....	1	1	35	.....	.....
1572.	O	N	2	Y	T	Y	.....	.....	.....	F	45	.....	3	2	200	200	.....
1573.	I	.....	.....	.....	.....	.....	.....	.....	.....	F	52	.....	1	1	12	25	.....
1574.	I	.....	.....	.....	.....	.....	.....	Y	.....	G	46	.....	1	1	107	.....	.....
1575.	O	.....	.....	.....	.....	.....	.....	.....	.....	G	26	.....	1	1	10	.....	.....
1576.	I	.....	.....	.....	.....	.....	.....	Y	Y	G	52	.....	G	1	6	.....	.....
1577.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	1	1	12	.....	.....
1578.	I	.....	.....	.....	.....	.....	.....	Y	.....	G	52	.....	G	1	3	.....	.....
1579.	S	..	1	Y	B	Y	.....	.....	.....	G	52	.....	1	1	75	.....	.....
1580.	S	.....	.....	.....	.....	.....	.....	.....	Y	F	50	.....	5	3	800	1000	.....
1581.	I	.....	.....	.....	.....	.....	.....	.....	.....	F	42	.....	1	1	50	50	.....
1582.	I	.....	.....	.....	.....	.....	.....	.....	.....	F	52	.....	.....	.....	30	.....	.....
1583.	S	..	3	Y	T	Y	.....	Y	.....	F	52	2	3	1	450	.....	.....
1584.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	1	1	65	.....	.....
1585.	I	..	2	Y	D	Y	.....	Y	.....	G	52	.....	2	1	223	150	.....
1586.	I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

DUNN COUNTY.

1587.	.....	N	.....	.....	.....	.....	.....	.....	.....	G	50	.....	.....	.....	.....	.....	.....
1588.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	.....	.....	.....	.....	.....
1589.	S	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	1	1	30	.....	.....
1590.	S	.....	.....	.....	.....	.....	.....	.....	.....	G	16	.....	3	6	1475	1500	.....
1591.	S	N	.....	.....	.....	.....	.....	Y	.....	G	50	.....	1	1	10	.....	.....
1592.	I	.....	.....	.....	.....	.....	.....	.....	Y	Y	G	50	.....	1	1	2	.....
1593.	.....	.....	.....	.....	.....	.....	.....	.....	.....	G	11	.....	1	1	80	.....	.....
1594.	I	.....	.....	.....	.....	.....	.....	Y	.....	G	52	.....	1	1	34	.....	.....
1595.	O	.....	.....	.....	.....	.....	.....	.....	.....	G	11	.....	1	1	40	.....	.....
1596.	.....	.....	.....	.....	.....	.....	.....	.....	.....	G	.....	.....	.....	.....	.....	.....	.....
1597.	.....	.....	.....	.....	.....	.....	.....	.....	.....	G	25	.....	.....	1	1	80	.....

LINCOLN COUNTY.

1598.	I	N	.....	.....	.....	.....	.....	Y	Y	.....	G	52	.....	.....	1	.....	.....	G 3
1599.	I	.....	.....	.....	.....	.....	.....	.....	.....	.....	G	35	.....	12	3	380	.....	.....
1600.	I	N	.....	.....	.....	.....	.....	.....	.....	Y	G	30	.....	1	1	25	.....	.....
1601.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	.....	.....	.....	.....
1602.	I	.....	.....	.....	.....	.....	.....	.....	.....	.....	G	37	.....	1	1	25	.....	.....
1603.	.....	.....	.....	.....	.....	.....	.....	N	.....	.....	G	37	.....	9	3	525	.....	.....

MERRILLAN.

Running number.	BUILDINGS.		PLANT.		HOURS PER WEEK.		EMPLOYEES.					STAIRWAYS.					
	1 to 2 stories.	3 or more stories.	Owned or leased.	Running or idle.	When running full time.	Date of inspection.	Full capacity.	Date of Inspection.					Number of fire escapes.	Outside.	Inside.	Openings guarded.	Have hand rails.
								Male.	Female.	Total.	Between 14 and 18 years.	Under 14 years.					
1604.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1605.	1	.....	O	R	60	60	170	168	.....	168	.....	.....	.....	.....	.....	.....	.....
1606.	1	.....	O	.....	60	60	60	4	.....	4	.....	.....	.....	.....	1	Y	Y
1607.	7	.....	O	.....	60	72	367	367	.....	367	60	6	.....	.....	1	.....	.....
1608.	7	.....	O	.....	60	60	45	40	.....	40	.....	.....	.....	.....	1	.....	.....
1609.	8	1	O	.....	60	72	300	133	1	134	5	.....	.....	1	.....	.....	.....

MERRILLAN.

1610.	1	.....	O	R	60	60	5	5	.....	5	.....	.....	.....	.....	.....	.....	.....
1611.	2	.....	O	.....	60	60	18	5	.....	5	.....	.....	.....	.....	.....	.....	.....
1612.	4	.....	O	I	60	.....	20	.....	.....	.....	.....	.....	.....	.....	1	Y	Y

MILTON JUNCTION.

1613.	2	.....	O	R	60	60	2	2	.....	2	.....	.....	.....	.....	.....	.....	.....
1614.	1	.....	O	.....	60	48	10	2	1	3	.....	.....	.....	1	.....	.....	.....
1615.	1	.....	O	I	60	.....	6	.....	.....	.....	.....	.....	.....	.....	1	Y	Y

MINERAL POINT.

1616.	3	.....	O	R	60	66	10	10	.....	10	2	.....	.....	.....	1	.....	Y
1617.	2	.....	O	.....	60	60	2	2	.....	2	.....	.....	.....	.....	1	Y	.....
1618.	1	.....	O	.....	66	66	2	2	.....	2	.....	.....	.....	.....	.....	.....	.....
1619.	P 1	.....	O	.....	60	60	5	2	.....	3	.....	.....	.....	.....	.....	.....	.....
1620.	4	.....	O	I	60	.....	45	.....	.....	.....	.....	.....	.....	.....	1	Y	Y
1621.	P 1	.....	L	R	60	60	5	3	.....	3	.....	.....	.....	.....	.....	.....	.....
1622.	1	1	O	.....	60	60	30	12	18	30	6	.....	.....	.....	1	.....	.....
1623.	12	2	L	.....	63	63	103	100	3	103	.....	.....	.....	.....	1	.....	.....
1624.	3	2	L	.....	60	60	10	6	.....	6	.....	.....	.....	.....	2	.....	.....

MONROE.

1625.	1	.....	L	R	60	60	3	3	.....	3	1	.....	.....	.....	.....	.....	.....
1626.	1	.....	L	.....	60	60	5	4	.....	4	.....	.....	.....	.....	1	Y	Y
1627.	P 1	.....	L	.....	60	60	5	3	2	5	3	.....	.....	.....	.....	.....	.....
1628.	1	1	O	.....	60	60	30	30	.....	30	.....	.....	.....	.....	.....	.....	.....
1629.	1	.....	O	I	60	60	10	5	.....	5	.....	.....	.....	.....	.....	.....	.....
1630.	3	1	O	R	60	60	10	10	.....	10	.....	.....	.....	.....	.....	.....	.....
1631.	1	.....	O	.....	72	72	6	3	.....	3	.....	.....	.....	.....	2	Y	Y
1632.	2	.....	L	.....	60	60	7	5	.....	5	.....	.....	.....	.....	.....	.....	.....
1633.	5	.....	O	.....	60	60	30	20	.....	20	.....	.....	.....	.....	2	Y	Y
1634.	2	.....	O	.....	60	60	5	3	.....	3	.....	.....	.....	.....	2	.....	.....
1635.	P 1	.....	L	.....	60	60	5	5	.....	5	.....	.....	.....	.....	.....	.....	.....
1636.	1	.....	L	.....	60	60	10	6	.....	6	.....	.....	.....	.....	1	.....	.....
1637.	1	.....	L	.....	60	60	5	3	.....	3	.....	.....	.....	.....	.....	.....	.....
1638.	1	.....	L	.....	60	60	7	3	2	5	.....	.....	.....	.....	.....	.....	.....
1639.	2	.....	L	.....	60	60	10	7	.....	7	.....	.....	.....	.....	1	Y	Y

WOOD COUNTY—Continued.

Running number	DOORS.		ELEVATORS.				Machinery vats and pan guarded.	CLOSETS.		Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER.			
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.		Properly provided.	Screened.						Steam.	Water.	Electric, Gas	
1604.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1605.	.....	N	.....	.....	.....	.....	.....	.....	.....	.....	32	.....	.....	.....	.....	.....	.....	.....
1606.	I	.....	.....	.....	.....	.....	.....	Y	Y	G	50	.....	4	1	175	700	.....	.....
1607.	S	.....	.....	.....	.....	.....	.....	.....	.....	G	49	.....	9	4	950	100	.....	.....
1608.	S	.....	.....	.....	.....	.....	.....	.....	.....	G	49	.....	9	3	300	.....	.....	.....
1609.	S	.....	.....	.....	.....	.....	.....	.....	.....	G	25	N	9	3	697	.....	.....	.....

JACKSON COUNTY.

1610.	I	N	.....	.....	.....	.....	.....	Y	Y	G	52	.....	1	1	7	.....	.....	.....
1611.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	32	.....	.....	.....	.....	.....	.....	.....
1612.	O	.....	.....	.....	.....	.....	.....	Y	.....	G	32	.....	.....	1	45	.....	.....	.....

ROCK COUNTY.

1613.	I	N	.....	.....	.....	.....	.....	Y	.....	G	52	.....	1	1	10	.....	.....	.....
1614.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	42	.....	.....	1	6	.....	.....	.....
1615.	S	.....	.....	.....	.....	.....	.....	.....	Y	G	.....	.....	.....	1	30	.....	.....	.....

IOWA COUNTY.

1616.	S	N	.....	.....	.....	.....	.....	Y	.....	F	32	.....	1	1	40	.....	.....	.....
1617.	O	.....	.....	.....	.....	.....	.....	.....	.....	G	35	.....	.....	1	14	.....	.....	.....
1618.	.....	.....	.....	.....	.....	.....	.....	.....	.....	G	.....	.....	2	1	125	.....	.....	.....
1619.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	.....	.....	HP	.....	.....	.....
1620.	S	.....	.....	.....	.....	.....	.....	Y	Y	G	45	.....	2	1	400	.....	.....	.....
1621.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	.....	1	2	.....	.....	.....
1622.	S	.....	.....	.....	.....	.....	.....	.....	.....	G	32	.....	.....	1	20	30	.....	.....
1623.	.....	.....	.....	.....	.....	.....	.....	.....	.....	G	20	.....	5	1	250	.....	.....	.....
1624.	O	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	.....	1	12	.....	.....	.....

GREEN COUNTY.

1625.	I	N	.....	.....	.....	.....	.....	Y	.....	G	.....	.....	.....	1	1	4	.....	.....
1626.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	.....	.....	.....	100	.....	.....
1627.	S	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	.....	.....	.....	2	.....	.....
1628.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	40	.....	.....	1	30	.....	.....	.....
1629.	.....	.....	.....	.....	.....	.....	.....	.....	.....	G	12	.....	.....	.....	HP	.....	.....	.....
1630.	I	N	.....	.....	.....	.....	.....	.....	.....	G	52	.....	.....	2	2	60	.....	.....
1631.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	.....	2	1	150	.....	.....
1632.	I	.....	.....	.....	.....	.....	.....	.....	.....	F	52	.....	.....	1	6	.....	.....	.....
1633.	S	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	.....	1	50	.....	.....	.....
1634.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	.....	1	70	.....	.....	.....
1635.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	.....	.....	.....	.....	.....	.....
1636.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	.....	.....	HP	.....	.....	.....
1637.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	.....	.....	.....	.....	.....	.....
1638.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	.....	1	1	.....	.....	.....
1639.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	.....	2	1	25	.....	.....

MONTICELLO.

Running number.	BUILDINGS.		PLANT.		HOURS PER WEEK.		EMPLOYEES.					STAIRWAYS.					
	1 to 2 stories.	3 or more stories.	Owned or leased.	Running or idle.	When running full time.	Date of inspection.	Full capacity.	Date of Inspection.					Number of fire escapes.	Outside.	Inside.	Openings guarded.	Have hand rails.
								Male	Female.	Total.	Between 14 and 18 years.	Under 14 years					
1640.	2	1	O	I	60	60	5	4	4	4	2	1	1	Y	Y		
1641.	2	1	O	R	60	60	5	2	5	2	1	1	1	Y	Y		
1642.	2	1	O	..	60	60	16	4	1	5	1	1	1	..	..

MORRIS.

1643.	7	1	O	R	66	66	65	65	65	65	1	Y	Y
-------	---	---	---	---	----	----	----	----	----	----	---	---	---

MOSINEE.

1644.	3	1	O	R	60	60	110	75	1	76	5	1	Y	Y
1645. P	1	1	L	..	..	..	..	..	..	..	..	..	..	..

MUSKEG.

1646.	2	1	O	I	60	..	12	1	1	1
-------	---	---	---	---	----	----	----	---	---	---	----	----	----	----

MERCER.

1647.	3	1	O	R	60	60	25	25	25	25	1	1	Y	Y
-------	---	---	---	---	----	----	----	----	----	----	---	---	---	---

MORRIE.

1648.	2	1	O	R	66	66	30	30	30	30	1	Y	Y
1649.	3	1	O	I	60	60	5	5	5	5	1	Y	Y

NASH.

1650.	6	1	O	R	66	66	110	110	110	110	1	Y	Y
-------	---	---	---	---	----	----	-----	-----	-----	-----	---	---	---

NECEDAH.

1651.	1	2	O	R	144	144	15	15	15	15	2	Y	Y
1652.	5	1	O	..	60	60	135	132	135	135	1	Y	Y
1653.	3	1	O	..	60	60	135	132	135	135	1	Y	Y

NEENAH.

1654.	2	1	O	R	60	60	10	6	6	6	1	Y	Y		
1655.	4	3	O	..	60	60	65	60	60	4	1	4	Y	Y	
1656.	2	2	O	..	144	144	31	25	6	31	3	2	..	..
1657.	2	1	O	..	144	144	20	17	3	20	3	1	..	..
1658.	3	1	O	..	144	144	75	50	25	75	10	1	2	3	..
1659.	1	1	O	..	144	144	13	13	13	13	1	2	..	..
1660.	1	1	O	..	60	60	48	22	19	41	4	1	..	..
1661. P	1	1	O	..	60	60	6	3	3	3	1	1	..	..
1662. P	1	1	L	..	60	60	10	3	3	6	1	1	Y	Y	
1663. P	2	1	L	..	84	84	6	6	6	6	1	1	..	..

GREEN COUNTY.

Running number	DOORS.		ELEVATORS				Machinery vats and pan guarded.	CLOSETS.		Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.		Properly provided.	Screened.						Steam.	Water.	Electric, Gas.
1640.	I	N	.....	.....	.....	.....	Y	.....	.....	G	26	.....	1	1	35	.....	.....
1641.	I	..	.....	.....	.....	.....	..	.....	.....	G	52	.....	1	1	25	.....	.....
1642.	I	..	.....	.....	.....	.....	..	.....	.....	G	32	.....	1	.....	.....	40	.....

SHAWANO COUNTY.

1643.	S	N	Y	G	20	3	1	75	45
-------	---	---	-------	-------	-------	-------	---	-------	-------	---	----	-------	---	---	----	----	-------

MARATHON COUNTY.

1644.	.....	N	.....	.....	.....	.....	.....	Y	.....	.....	.....	1	6	1	.....	.....	.....
1645.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

BAYFIELD COUNTY.

1646.	N	Y	G	40	1	1
-------	-------	---	-------	-------	-------	-------	-------	---	-------	---	----	-------	---	---	-------	-------	-------

IRON COUNTY.

1647.	O	N	G	40	3	1	150
-------	---	---	-------	-------	-------	-------	-------	-------	-------	---	----	-------	---	---	-----	-------	-------

MARATHON COUNTY.

1648.	.....	N	.....	.....	.....	.....	.....	Y	.....	G	6	.....	2	1	40	.....	.....
1649.	S	..	.....	.....	.....	.....	..	.....	.....	G	3	.....	1	1	45	.....	.....

BUFFALO COUNTY.

1650.	I	N	Y	Y	G	35	1	1	50
-------	---	---	-------	-------	-------	-------	---	---	-------	---	----	-------	---	---	----	-------	-------

JUNEAU COUNTY.

1651.	I	N	.....	.....	.....	.....	Y	Y	.....	G	33	.....	1	1	65	75	.....
1652.	.....	.....	.....	.....	.....	.....	N	..	.....	G	50	.....	1	1	150	.....	.....
1653.	S	N	1	.....	.....	.....	..	..	.....	G	50	.....	7	2	325	.....	.....

WINNEBAGO COUNTY.

1654.	I	N	.....	.....	.....	.....	Y	.....	.....	F	43	.....	1	1	35	.....	.....
1655.	I	..	1	Y	S	Y	.....	Y	.....	G	52	.....	1	1	50	.....	.....
1656.	I	..	1	..	D	..	..	..	Y	G	52	.....	2	1	150	300	.....
1657.	I	..	1	..	D	..	..	..	..	G	52	.....	1	1	80	150	.....
1658.	I	..	3	..	S	..	..	..	Y	G	52	.....	4	2	450	300	.....
1659.	O	..	.....	.....	.....	.....	..	..	.....	G	52	.....	1	1	125	200	.....
1660.	I	..	.....	.....	.....	.....	..	..	Y	G	47	.....	1	1	35	15	.....
1661.	I	..	.....	.....	.....	.....	..	..	.....	G	52	.....	1	1	3	.....	.....
1662.	I	..	.....	.....	.....	.....	..	..	Y	G	52	.....	.....	.....	5	.....	.....
1663.	I	..	.....	.....	.....	.....	..	..	.....	G	52	.....	2	1	50	300	.....

NEENAH.

Running number.	BUILDINGS.		PLANT.		HOURS PER WEEK.		EMPLOYEES						STAIRWAYS.				
	1 to 2 stories.	3 or more stories.	Owned or leased.	Running or idle.	When running full time.	Date of inspection.	Full capacity.	Date of Inspection.					Number of fire escapes.	Outside.	Inside.	Openings guarded.	Have hand rails.
								Male	Female.	Total.	Between 14 and 18 years.	Under 14 years					
1664.	5	.....	O	R	144	144	75	50	25	75	.....	.....	.....	.....	2	Y	Y
1665.	3	.....	O	..	60	60	18	12	.....	12	.....	.....	.....	.....	.....	.....	.....
1666.	P	1	.....	L	..	60	60	5	2	3	5	.....	.....	1	1	.....	.....
1667.	P	1	.....	O	..	60	60	8	8	.....	8	.....	.....	.....	1	1	.....
1668.	P	6	.....	O	..	144	144	75	60	15	75	.....	.....	1	1	.....	.....

NEILLSVILLE.

1669.	9	.....	O	R	60	60	18	18	.....	18	1	.....	.....	1	1	Y	Y
1670.	5	.....	O	..	60	60	4	4	.....	4	.....	.....	.....	1	3	.....	.....
1671.	4	.....	O	..	60	60	35	20	.....	20	2	.....	.....	.....	.....	.....	.....
1672.	4	1	O	R	60	.....	100	10	.....	10	16	.....	.....	2	3	Y	Y
1673.	P	1	O	I	60	60	5	4	.....	4	.....	.....	.....	.....	2	2	.....
1674.	1	.....	O	..	60	60	5	3	.....	3	.....	.....	.....	.....	1	.....	.....
1675.	4	.....	O	..	60	60	6	5	.....	5	.....	.....	.....	1	1	.....	.....

NEKOOSA.

1676.	O	R	144	144	300	225	9	234	6	1	Y	Y
-------	-------	-------	---	---	-----	-----	-----	-----	---	-----	---	-------	-------	---	-------	---	---

NEW LONDON.

1677.	9	.....	O	R	60	60	100	85	.....	85	18	.....	.....	.....	2	Y	Y
1678.	2	.....	O	..	60	60	6	6	.....	6	.....	.....	.....	.....	1	.....	.....
1679.	4	.....	O	I	60	.....	25	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
1680.	2	3	O	R	60	60	9	9	.....	9	.....	.....	.....	.....	2	.....	.....
1681.	2	.....	O	..	66	66	50	32	.....	32	.....	.....	.....	.....	1	.....	.....
1682.	1	.....	O	R	60	60	6	5	.....	5	.....	.....	.....	.....	.....	.....	.....
1683.	2	.....	O	..	60	60	5	1	.....	1	.....	.....	.....	.....	1	Y	Y
1684.	8	.....	O	..	60	60	70	66	.....	66	9	.....	.....	.....	.....	.....	.....
1685.	1	.....	O	..	112	112	2	2	.....	2	.....	.....	.....	.....	.....	.....	.....
1686.	3	.....	O	..	60	60	7	5	.....	5	.....	.....	.....	.....	.....	.....	.....
1687.	1	.....	L	..	60	60	5	3	2	5	.....	.....	.....	.....	.....	.....	.....
1688.	P	1	.....	L	..	60	60	5	2	2	.....	.....	.....	.....	.....	.....	.....
1689.	1	.....	L	..	66	60	4	3	1	4	.....	.....	.....	.....	.....	.....	.....
1690.	3	.....	O	..	66	66	40	22	.....	22	3	.....	.....	.....	1	Y	Y
1691.	7	.....	O	..	60	60	45	30	.....	30	4	.....	.....	.....	2	.....	.....
1692.	P	1	.....	O	..	60	60	10	5	.....	5	.....	.....	.....	.....	.....	.....

NEW RICHMOND.

1693.	5	1	O	R	60	60	17	16	1	17	.....	.....	1	2	3	Y	Y
1694.	6	.....	O	..	60	60	9	9	.....	9	.....	.....	.....	1	2	.....	.....
1695.	5	.....	O	..	60	60	60	20	.....	20	2	.....	.....	.....	2	.....	.....

WINNEBAGO COUNTY—Continued.

Running number	DOORS.		ELEVATORS				Machinery vats and pan guarded.	CLOSETS.			Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.		Properly provided.	Screened.	Sanitary condition.					Steam.	Water.	Electric, Gas
1664.	I	N	1	Y	D	Y	Y	Y	Y	G	52	1	1	125	600	.....
1665.	O	..	.....	.....	.....	..	..	..	..	G	52	1	1	75	.....	.....
1666.	I	..	.....	.....	.....	..	..	Y	.....	G	52	1	1	5	.....	.....
1667.	O	..	.....	.....	.....	..	..	..	.....	G	52	1	2	8	.....	.....
1668.	I	..	2	Y	B	Y	..	..	.....	B	52	3	3	375	375	.....

CLARK COUNTY.

1669.	S	N	.....	.....	.....	.....	Y	Y	.....	G	35	1	1	35	.....	.....
1670.	..	..	.....	.....	.....	.....	..	..	.....	G	52	1	1	30	.....	.....
1671.	I	..	.....	.....	.....	.....	..	..	.....	G	..	2	2	70	.....	.....
1672.	I	..	.....	.....	.....	.....	..	..	.....	G	37	2	2	350	.....	.....
1673.	I	..	.....	.....	.....	.....	..	..	.....	G	52	1	1	85	.....	.....
1674.	I	N	.....	.....	.....	.....	..	..	.....	..	36	..	..	40	.....	.....
1675.	I	..	.....	.....	.....	.....	..	..	.....	..	52	1	1	18	.....	.....

WOOD COUNTY.

1676.	I	N	2	Y	A	Y	Y	Y	Y	G	52	6	3	526	4300
-------	---	---	---	---	---	---	---	---	---	---	----	---	---	-----	------	-------

WAUPACA COUNTY.

1677.	S	N	1	Y	A	Y	Y	.....	.....	G	52	3	3	200	.....	.....
1678.	I	..	.....	.....	.....	.....	..	..	.....	..	52	1	1	50	.....	.....
1679.	I	..	.....	.....	.....	.....	..	..	.....	G	32	2	2	100	.....	.....
1680.	I	..	.....	.....	.....	.....	..	..	.....	G	52	1	1	12	.....	.....
1681.	S	..	.....	.....	.....	.....	..	..	.....	G	12	4	2	100	.....	.....
1682.	O	N	.....	.....	.....	.....	Y	.....	.....	G	52	..	1	25	.....	.....
1683.	I	..	.....	.....	.....	.....	..	..	.....	F	52	1	1	15	.....	.....
1684.	O	..	.....	.....	.....	.....	N	.....	.....	G	52	1	1	35	.....	.....
1685.	I	..	.....	.....	.....	.....	..	..	.....	G	52	1	1	175	.....	.....
1686.	I	..	.....	.....	.....	.....	Y	.....	.....	G	52	1	1	12	.....	.....
1687.	I	..	.....	.....	.....	.....	..	Y	Y	G	52	1	1	5	.....	.....
1688.	I	..	.....	.....	.....	.....	..	..	.....	G	52	.....	.....	.....	.....	.....
1689.	I	..	.....	.....	.....	.....	Y	.....	.....	G	52	1	.....	2	.....	2
1690.	S	..	.....	.....	.....	.....	..	..	.....	G	10	1	1	65	.....	.....
1691.	I	..	1	Y	G	Y	N	.....	.....	G	46	1	1	65	.....	.....
1692.	I	..	.....	.....	.....	.....	..	..	.....	G	52	.....	.....	.....	.....	.....

ST. CROIX COUNTY.

1693.	I	N	.....	.....	.....	.....	Y	Y	.....	G	52	2	1	80	50	.....
1694.	I	..	.....	.....	.....	.....	..	..	.....	G	52	1	1	40	.....	.....
1695.	I	..	.....	.....	.....	.....	..	..	.....	..	50	1	5	240	.....	.....

OAKFIELD.

Running number.	BUILDINGS.		PLANT.		HOURS PER WEEK.		EMPLOYEES.					STAIRWAYS.					
	1 to 2 stories.	3 or more stories.	Owned or leased.	Running or idle.	When running full time.	Date of inspection.	Full capacity.	Date of Inspection.					Number of fire escapes.	Outside.	Inside.	Openings guarded.	Have hand rails.
								Male	Female.	Total.	Between 14 and 18 years.	Under 14 years					
1696.	2		O	I	60		4							1	1	Y	Y

OCONTO.

1697.	2		O	R	72	72	6	2		2				1			
1698.	1		O	I	60		55										
1699.	1		O	R	60	60	10	2		2					1	Y	Y
1700.	1		L		60	60	5	3		3					1		
1701.	2		O	I	60		37								1		
1702.	10	1	O	R	60	60	198	32		32			1	3	2		
1703.	6		O		60	60	100	56		56					1		
1704.	1	1	O		60	60	5	2	1	3					1		
1705.	3		O		60	60	10	7		7					1		
1706.	3		O		60	60				26							
1707.	4	1	O		60	60	65	44		44			1	1	2	Y	Y
1708.	2		L		60	60	7	4	3	7							
1709.	1		O		60	48	7	7		7							
1710.	4		O	I	60		40								2	Y	Y

OCONTO FALLS.

1711.	2		O	R	144	144	155	147	8	155	5				4	Y	Y
1712.	4		O		60	60	20	5		5							

ODANAH.

1713.	4		O	R	120	22	192	192		192	2			3	1	Y	Y
-------	---	--	---	---	-----	----	-----	-----	--	-----	---	--	--	---	---	---	---

ONALASKA.

1714.	4		O	R	60	60	115	105	10	115					2		Y
1715.	5		O		60	60	6	5		5					6	Y	

OSCEOLA.

1716.	4	1	O	R	144	144	22	20		20					2	Y	Y
1717.	1		L		60	60	3	2		2							
1718.	1		O		60	60	3	3		3							

OSHKOSH.

1719.	1		L	R	60	60	16	12	4	16	2				1	Y	Y
1720.	1		O		60	60	15	7	5	12					1		
1721.	3	2	O		60	60	200	140	1	141	14		4	1	2		
1722.	1		O	I	48	8	6	6		6							
1723.	1		L	R	48	48	8	7	1	8	2			1	1	Y	Y
1724.	1	2	O	I			35	4		4					2	Y	Y
1725.		4	O	R	48	48	300	180	56	236	5		3		3		
1726.	5		O		60	60	30	30		30	6				2		
1727.	2		L		60	48	24	15	2	17	1			1	1		
1728.	4		O		60	48	75	15		15							

FOND DU LAC COUNTY.

Running number	DOORS.		ELEVATORS.				Machinery vats and pan guarded.	CLOSETS.		Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.		Properly provided.	Screened.						Steam.	Water.	Electric, Gas.
1696.	I	N	.....	.....	.....	.....	N	Y	.....	F	30	.....	1	1	20	.....	.....

OCONTO COUNTY.

1697.	S	N	.....	.....	.....	.....	Y	.....	.....	G	52	.....	2	1	225	.....	.....
1698.	S	.....	.....	.....	.....	.....	.....	.....	.....	G	.....	.....	.....	.....	.....	.....	45
1699.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	16	.....	.....	.....	.....	.....	10
1700.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	.....	1	3	.....	.....
1701.	S	.....	.....	.....	.....	.....	.....	.....	.....	G	.....	.....	3	1	125	.....	.....
1702.	O	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	5	1	475	.....	.....
1703.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	2	3	110	.....	.....
1704.	S	.....	.....	.....	.....	.....	.....	.....	.....	G	3	.....	1	1	100	.....	.....
1705.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	1	1	12	.....	.....
1706.	S	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	2	3	225	.....	40
1707.	S	.....	.....	.....	.....	.....	.....	.....	.....	G	26	.....	9	2	600	.....	.....
1708.	I	.....	.....	.....	.....	.....	.....	Y	Y	G	52	.....	.....	1	3	.....	.....
1709.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	26	.....	.....	1	1	30	.....
1710.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	32	.....	.....	4	2	75	.....

OCONTO COUNTY.

1711.	N	N	2	Y	T	Y	Y	Y	Y	G	50	.....	6	2	.....	.....	.....
1712.	.....	.....	.....	.....	.....	.....	N	Y	.....	G	16	.....	1	1	75	.....	.....

ASHLAND COUNTY.

1713.	O	N	N	Y	G	22	2	4	1	250
-------	---	---	-------	-------	-------	-------	---	---	-------	---	----	---	---	---	-----	-------	-------

LA CROSSE COUNTY.

1714.	.....	N	.....	.....	.....	.....	N	Y	.....	G	26	.....	8	3	150	.....	.....
1715.	I	.....	.....	.....	.....	.....	Y	.....	.....	G	52	.....	1	1	12	.....	.....

POLK COUNTY.

1716.	I	N	.....	.....	.....	.....	N	Y	.....	G	52	.....	1	.....	.....	85	.....
1717.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	.....	.....	.....	.....	.....
1718.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	.....	.....	.....	.....	.....

WINNEBAGO COUNTY.

1719.	I	N	.....	.....	.....	.....	N	Y	Y	G	52	.....	.....	1	.....	.....	G 7
1720.	I	.....	.....	.....	.....	.....	Y	.....	.....	G	52	.....	1	1	25	.....	.....
1721.	O	.....	2	Y	T	Y	.....	.....	Y	G	45	.....	2	2	185	.....	.....
1722.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	40	.....	1	1	12	.....	.....
1723.	I	.....	.....	.....	.....	.....	.....	N	N	G	52	.....	.....	.....	.....	.....	.....
1724.	S	N	.....	.....	.....	.....	Y	Y	.....	G	47	.....	.....	1	1	66	.....
1725.	I	.....	3	Y	D	Y	.....	.....	Y	G	36	1	4	2	185	.....	.....
1726.	S	.....	.....	.....	.....	.....	Y	.....	.....	G	52	.....	1	1	100	.....	.....
1727.	I	.....	.....	.....	.....	.....	.....	.....	Y	G	50	.....	1	1	30	.....	.....
1728.	O	.....	.....	.....	.....	.....	.....	.....	.....	G	39	.....	.....	1	2	20	.....

OSHKOSH.

Running number.	BUILDINGS.		PLANT.		HOURS PER WEEK.		EMPLOYEES.					Number of fire escapes.	STAIRWAYS.				
	1 to 2 stories.	3 or more stories.	Owned or leased.	Running or idle.	When running full time.	Date of inspection.	Full capacity.	Date of Inspection.					Outside.	Inside.	Openings guarded.	Have hand rails.	
								Male.	Female.	Total.	Between 14 and 18 years.						Under 14 years.
1729.	2	1	O	R	47	47	200	70	.....	70	13	.....	4	.....	2	Y	Y
1730.	3	3	O	..	108	108	60	60	.....	60	.....	.....	.....	.....	.....	.....	.....
1731.	.....	.....	O	..	60	60	125	100	7	107	5	.....	.....	.....	2	Y	Y
1732.	.....	.....	O	..	60	60	50	50	.....	50	.....	.....	.....	.....	2	Y	Y
1733.	2	1	O	I	60	.....	30	15	.....	15	.....	.....	.....	1	..	..
1734.	7	.....	O	R	60	54	60	24	.....	24	.....	.....	.....	.....	.....	.....	.....
1735.	.....	1	O	..	48	48	20	15	5	20	2	.....	2	1	Y	Y	
1736.	8	.....	O	..	60	60	285	60	158	218	87	.....	.....	1	3	.....	.....
1737.	1	1	O	I	.....	.....	7	5	.....	5	.....	.....	.....	1	1	.....	.....
1738.	P	1	L	R	60	54	20	3	15	18	3	.....	.....	.....	.....	.....	.....
1739.	P	1	L	..	60	58	10	9	.....	9	.....	.....	.....	.....	.....	.....	.....
1740.	5	.....	O	..	60	48	100	75	.....	75	.....	.....	.....	1	4	Y	Y
1741.	1	.....	O	I	60	.....	.....	.....	.....	.....	.....	.....	.....	1	1	.....	.....
1742.	1	.....	O	R	60	54	12	7	.....	7	1	.....	.....	.....	.....	.....	.....
1743.	2	.....	O	..	60	50	165	162	3	165	32	.....	.....	4	Y	Y	
1744.	2	.....	O	..	60	54	60	15	.....	15	.....	.....	.....	.....	.....	.....	.....
1745.	1	.....	L	..	60	60	21	19	2	21	27	.....	.....	2	Y	Y	
1746.	2	.....	O	..	60	60	38	38	.....	38	.....	.....	2	1	Y	Y	
1747.	3	.....	O	..	60	48	11	6	4	10	.....	.....	.....	1	Y	..	
1748.	1	1	O	..	60	60	8	7	.....	7	.....	.....	.....	1	1	.....	.....
1749.	2	.....	O	I	60	.....	26	.....	.....	.....	.....	4	2	2	Y	Y	
1750.	3	.....	O	R	60	48	225	165	5	170	25	.....	4	1	2	.....	.....
1751.	.....	P	1	O	64	64	8	4	1	5	.....	.....	.....	1	1	.....	.....
1752.	P	1	L	..	60	60	20	4	12	16	.....	.....	.....	1	1	.....	.....
1753.	2	.....	L	..	60	54	35	9	7	16	.....	.....	.....	2	N	N	
1754.	7	2	O	R	60	54	250	200	4	204	20	.....	5	1	2	Y	Y
1755.	.....	1	O	..	60	60	20	12	.....	12	.....	.....	.....	2	.....	.....	.....
1756.	2	.....	L	I	60	.....	9	1	.....	1	.....	.....	.....	1	.....	.....	.....
1757.	10	.....	O	R	60	60	20	20	.....	20	.....	.....	.....	7	.....	.....	.....
1758.	P	1	L	..	59	59	65	7	38	45	21	.....	1	1	.....	.....	.....
1759.	2	.....	O	..	70	70	17	15	1	16	.....	.....	.....	1	.....	.....	.....
1760.	1	3	O	..	60	60	140	89	5	94	5	.....	3	1	2	.....	.....
1761.	2	.....	O	..	168	168	10	9	.....	9	.....	.....	.....	.....	.....	.....	.....
1762.	3	.....	O	..	60	60	25	5	.....	5	.....	.....	.....	1	Y	Y	
1763.	1	.....	O	..	60	54	20	11	1	12	.....	.....	.....	1	.....	.....	.....
1764.	1	.....	L	..	60	60	3	3	.....	3	.....	.....	.....	1	.....	.....	.....
1765.	P	1	L	..	60	60	25	3	15	18	.....	.....	.....	1	.....	.....	.....
1766.	P	1	L	..	60	60	12	10	1	11	.....	.....	.....	1	N	.....	.....
1767.	5	.....	O	..	168	168	10	10	.....	10	.....	.....	.....	1	Y	Y	
1768.	P	1	L	..	48	48	10	10	2	12	3	.....	1	1	.....	.....	.....
1769.	.....	.....	O	..	60	60	700	700	21	721	.....	.....	4	1	1	.....	N
1770.	1	.....	O	..	60	60	60	60	.....	60	20	5	.....	2	.....	.....	Y
1771.	2	.....	O	..	60	60	106	106	.....	106	20	.....	.....	2	Y	.....	.....
1772.	P	1	L	..	60	60	8	2	6	8	1	.....	.....	.....	.....	.....	.....
1773.	2	.....	O	..	60	48	8	5	.....	5	.....	.....	.....	.....	.....	.....	.....
1774.	2	.....	O	..	60	60	290	150	4	154	7	.....	2	.....	Y	Y	
1775.	4	.....	O	..	60	60	10	4	.....	4	.....	.....	1	1	.....	.....	.....
1776.	1	.....	L	..	60	60	18	10	.....	10	.....	.....	.....	1	.....	.....	.....
1777.	1	1	O	..	48	48	15	7	.....	7	.....	.....	.....	1	.....	.....	.....
1778.	2	2	O	..	60	60	95	71	24	95	29	.....	1	4	.....	.....	.....

WINNEBAGO COUNTY—Continued.

Running number	DOORS.		ELEVATORS.				Machinery vats and pan guarded.	CLOSETS.			Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.		Properly provided.	Screened.	Sanitary condition.					Steam.	Water.	Electric, Gas.
1729.	S	N	2	Y	D	Y	Y	Y	Y	G	39	...	2	1	350	...	...
1730.	Z	...	...	...	...	...	...	...	...	G	52	...	2	2	60	...	...
1731.	O	...	1	Y	D	Y	...	...	Y	G	52	...	1	1	140	...	...
1732.	Z	...	...	...	...	...	...	...	...	...	50	...	1	2	200	...	...
1733.	O	N	1	Y	...	...	Y	...	...	G	20	...	...	...	...	...	...
1734.	...	...	...	...	...	...	...	...	...	G	50	...	1	2	40	...	...
1735.	I	N	1	Y	D	Y	...	Y	Y	G	50	...	...	...	...	...	...
1736.	O	N	3	Y	A	...	...	...	...	G	50	...	4	4	300	...	...
1737.	I	...	...	...	...	...	...	...	...	G	52	...	2	1	100	...	...
1738.	I	...	...	...	...	...	...	...	N	F	52	...	1	1	14	...	...
1739.	I	...	...	...	...	...	...	...	...	G	52	...	1	1	10	...	...
1740.	O	...	2	Y	D	Y	...	...	...	G	42	...	2	1	200	...	...
1741.	O	...	...	...	...	...	...	...	Y	G	11	...	4	1	150	...	...
1742.	O	...	...	...	...	...	...	...	...	G	52	...	1	1	10	...	...
1743.	S	...	1	Y	A	Y	...	...	Y	G	48	...	2	1	250	...	...
1744.	...	...	...	...	...	...	...	...	...	G	48	...	1	2	50	...	...
1745.	O	...	1	Y	D	Y	...	...	Y	G	52	...	1	1	20	...	...
1746.	...	...	...	...	...	...	...	...	...	G	23	...	3	1	150	...	...
1747.	O	...	...	...	...	...	...	...	Y	G	52	...	1	1	25	...	...
1748.	...	...	...	...	...	...	Y	...	...	G	52	...	2	1	60	...	...
1749.	S	N	...	...	...	...	Y	Y	Y	G	20	...	4	1	70	...	...
1750.	O	...	2	Y	A	Y	...	...	...	G	49	1	3	3	375	...	...
1751.	O	...	...	...	...	...	...	...	...	G	52	...	...	...	...	...	...
1752.	I	...	1	Y	D	Y	...	...	...	G	52	...	1	1	15	...	...
1753.	O	...	...	...	...	...	N	...	...	G	52	...	1	1	75	...	...
1754.	O	...	2	Y	S	Y	Y	...	...	G	44	...	3	3	550	...	...
1755.	O	...	1	Y	A	...	...	...	...	G	52	...	...	...	...	...	...
1756.	O	...	...	...	...	...	...	...	Y	G	26	...	1	1	25	...	...
1757.	I	...	...	...	...	...	...	...	...	G	52	...	3	2	26	...	...
1758.	O	...	...	...	...	...	...	...	Y	G	46	...	...	...	...	...	...
1759.	O	...	...	...	...	...	Y	...	...	G	52	...	4	4	800	...	...
1760.	I	...	2	Y	D	Y	...	...	...	G	45	...	2	1	150	...	...
1761.	...	...	...	...	...	...	...	...	...	G	52	...	2	2	120	...	...
1762.	S	...	...	...	...	...	...	...	...	G	52	...	1	1	12	...	...
1763.	I	...	...	...	...	...	...	...	Y	G	52	...	1	1	30	...	...
1764.	I	...	...	...	...	...	...	...	...	F	52	...	1	1	30	...	...
1765.	...	...	1	Y	D	Y	...	...	Y	G	...	...	...	...	...	...	...
1766.	I	...	...	...	...	...	...	...	...	G	52	...	1	1	35	...	...
1767.	O	...	...	...	...	...	...	...	...	G	52	...	4	5	...	...	...
1768.	I	...	...	...	...	...	...	...	Y	G	49	...	...	...	...	...	...
1769.	S	Y	4	Y	T	Y	N	...	...	G	48	...	2	5	1000	...	...
1770.	S	N	...	...	...	...	Y	...	...	G	6	...	1	1	150	...	...
1771.	S	...	...	...	...	...	...	...	...	G	22	...	7	1	400	...	...
1772.	I	...	...	...	...	...	...	...	N	G	52	...	1	1	10	...	...
1773.	...	...	...	...	...	...	...	...	...	G	44	...	1	1	10	...	...
1774.	O	N	1	Y	T	Y	...	...	Y	G	50	...	11	2	450	...	...
1775.	I	...	...	...	...	...	...	...	...	G	52	...	1	1	20	...	...
1776.	O	...	1	Y	A	Y	...	...	...	G	52	...	1	1	20	...	...
1777.	I	...	...	...	...	...	...	...	...	G	42	...	2	1	100	...	...
1778.	I	...	3	Y	D	Y	N	...	Y	G	47	...	1	1	75	...	...

WINNEBAGO COUNTY—Continued.

Running number	DOORS.		ELEVATORS				Machinery vats and pan guarded.	CLOSETS.		Sanitary condition	Weeks in operation, 1896.	Number of accidents.	Number of boilers	Number of engines.	HORSE-POWER		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.		Properly provided.	Screened.						Steam	Water.	Electric, Gas
1779.	I	N					Y	Y	Y	G	44		1	1	75		
1780.	O		1	Y	D	Y	Y			G	50		1	1	50		
1781.	O		1	Y	S					G	50		1	1	25		
1782.	O		1	Y						G	52		1	1	20		
1783.	O									G	52		1	1	30		
1784.	O									G	2		1	1	35		
1785.	O									G	52		1	1	15		
1786.	I		1	Y	A	Y	Y		Y	G	52		1	1	75		
1787.	O						Y		Y	G	52		1	1	75		
1788.	O								Y	G	52		1	1	75		
1789.			2	Y	D	Y				G	44		3	3	500		
1790.	I		1	Y	D					G							
1791.	O									G	30						
1792.	O						Y		N	G			3	2	50		
1793.									Y	G	52						

PRICE COUNTY.

1794.	S	N						Y	Y	G	52		4	2	500		
-------	---	---	--	--	--	--	--	---	---	---	----	--	---	---	-----	--	--

BARRON COUNTY.

1795.	I	N					N	Y	G	52		1	1	75		
-------	---	---	--	--	--	--	---	---	---	----	--	---	---	----	--	--

MARINETTE COUNTY.

1796.	I	N					Y		G	26		1	1	45		
1797.	O	N							G	20		1	1	100		
1798.	S	N						Y	G	30		5	1	550	500	

MARINETTE COUNTY.

1799.	I	N											8	2	225		
-------	---	---	--	--	--	--	--	--	--	--	--	--	---	---	-----	--	--

CRAWFORD COUNTY.

1800.	O						Y		G	10		1	1	30		
1801.	I	N							G			1	1	50		

PRICE COUNTY.

1802.	I	N					Y	Y	G	32		14	2	500		
1803.	I								G	52					2	
1804.									G	52						G 3
1805.	I						N		G	52		9	3	100		

GRANT COUNTY.

1806.	I	N						Y	G	52						
1807.	I						Y		G	52			1	2		
1808.	I								G	52						
1809.	I						Y		G	36		1	1	30		
1810.	I								G	52		2	3	75		

PLATTEVILLE.

Running number.	BUILDINGS.		PLANT.		HOURS PER WEEK.		EMPLOYEES					Number of fire escapes.	STAIRWAYS.				
	1 to 2 stories.	3 or more stories.	Owned or leased.	Running or idle.	When running full time.	Date of inspection.	Full capacity.	Date of Inspection.					Outside.	Inside.	Openings guarded.	Have hand rails.	
								Male	Female.	Total.	Between 14 and 18 years.						Under 14 years.
1811.	P	1	.....	L	R	60	60	5	3	.....	3	.....	.....	.....	1	Y	Y
1812.		2	.....	O	..	60	60	7	5	.....	.....	.....	.....	.....	1	Y	Y
1813.		4	1	O	..	60	60	10	7	.....	.....	.....	.....	.....	1	Y	Y
1814.		2	.....	O	I	60	60	50	17	33	50	18	.....	.....	1	Y	Y
1815.		2	.....	O	R	84	84	2	2	.....	2	.....	.....	.....	.....	.....	.....
1816.		2	.....	O	I	60	.....	6	.....	.....	.....	.....	.....	.....	.....	.....	.....
1817.	P	1	.....	L	R	60	60	36	15	4	19	1	.....	.....	1	Y	Y
1818.		2	.....	O	..	60	60	6	4	1	5	.....	.....	.....	.....	.....	.....
1819.		2	.....	O	..	60	60	5	3	.....	3	.....	.....	.....	.....	.....	.....
1820.		2	.....	O	..	60	48	5	3	.....	3	.....	.....	.....	1	Y	Y

PLUM CITY.

1821.	7	.....	O	R	60	60	25	10	.....	10	2	.....	.....	1	1	Y	N
1822.	2	.....	O	I	.....	.....	21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

PLYMOUTH.

1823.	3	.....	1	O	R	60	60	8	3	.....	3	.....	.....	.....	3	Y	Y
1824.	2	.....	.....	O	I	60	.....	15	.....	.....	.....	.....	.....	.....	1	.....	.....
1825.	2	.....	.....	O	R	60	60	15	8	.....	8	.....	.....	.....	.....	.....	.....
1826.	2	.....	2	O	..	60	60	85	67	.....	67	8	.....	.....	2	Y	Y
1827.	P	2	.....	O	..	60	60	5	.....	5	5	.....	.....	.....	.....	.....	.....
1828.	.....	P	1	L	..	60	60	5	4	1	5	.....	.....	.....	1	Y	Y
1829.	2	.....	.....	O	..	60	60	5	3	.....	3	.....	.....	.....	.....	.....	.....
1830.	1	.....	.....	O	I	60	.....	60	.....	.....	.....	.....	.....	.....	.....	.....	.....
1831.	5	.....	.....	O	R	60	60	8	8	.....	8	.....	.....	.....	.....	.....	.....
1832.	2	.....	.....	O	I	60	.....	35	.....	.....	.....	.....	.....	.....	.....	.....	.....
1833.	5	.....	.....	O	R	60	60	15	15	.....	15	1	.....	.....	.....	.....	.....

PORCUPINE.

1834.	1	O	R	60	60	15	15	15
-------	---	-------	-------	---	---	----	----	----	----	-------	----	-------	-------	-------	-------	-------	-------

PORT EDWARDS.

1835.	5	O	R	144	144	190	178	10	188	6	3	Y	Y
-------	---	-------	-------	---	---	-----	-----	-----	-----	----	-----	---	-------	-------	---	---	---

PORTER'S MILL.

1836.	12	O	R	60	60	300	250	250	3	2	3	5	Y	Y
-------	----	-------	-------	---	---	----	----	-----	-----	-------	-----	---	---	-------	---	---	---	---

PORTAGE.

1837.	1	.....	.....	L	R	60	54	50	5	32	37	5	.....	.....	2	Y	Y
1838.	.....	1	.....	O	..	60	60	10	7	1	8	.....	.....	.....	1	.....	.....
1839.	1	.....	.....	L	..	60	60	20	15	5	20	.....	.....	.....	1	.....	.....
1840.	5	.....	.....	O	..	60	60	36	36	.....	36	.....	.....	.....	.....	.....	.....
1841.	4	O	..	60	60	6	6	6	1	2	Y	Y

GRANT COUNTY—Continued.

Running number	DOORS.		ELEVATORS.				CLOSETS.			Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER.			
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.	Machinery vats and pan guarded.	Properly provided.	Screened.					Sanitary condition.	Steam.	Water.	Electric, Gas
1811.	I	N								G	52						
1812.	I									G	40						
1813.	I						Y	Y		G	52	1	1	20			
1814.	S								Y	G	53	1	1	20			
1815.	I									G	52	2	1	150			
1816.	O									F	26	1	1	8			
1817.	I		1	Y	B	Y		Y		G	52						
1818.	I									G	52	1	1	6			
1819.	I						N			G	52	1	1	15			
1820.	S						Y			G	26						8

PIERCE COUNTY.

1821.	S	N					N	Y		G	18	1	2	75			
1822.	O	N								F	32	1	1	50			

SHEBOYGAN COUNTY.

1823.	I	N					Y			G	52	1	1	50	90		
1824.	I									F	45	1	1	15			
1825.	O									F		1	1	12			
1826.	O		2	Y	B	Y	Y	Y		G	40	2	1	150			
1827.	I									G	52	1	1	6			
1828.	I								Y	G	52		1				1
1829.	I									G	52	1	1	6			
1830.	O		2	Y	B	Y		Y		G	46	1	1	100			
1831.	I						N			G	52	1	1	35			
1832.	O						Y			G	44	1	1	65			
1833.	O									G	52	1	1	20			

PEPIN COUNTY.

1834.		N					N	Y		F	30	1	1	25			
-------	--	---	--	--	--	--	---	---	--	---	----	---	---	----	--	--	--

WOOD COUNTY.

1835.	S	N	2	Y	A		Y	Y	Y	G		5	2	500	3500		
-------	---	---	---	---	---	--	---	---	---	---	--	---	---	-----	------	--	--

EAU CLAIRE COUNTY.

1836.	S	N					N	Y		G	24	15	8	550			
-------	---	---	--	--	--	--	---	---	--	---	----	----	---	-----	--	--	--

COLUMBIA COUNTY.

1837.	O	N					Y	Y	Y	F	49		1				6
1838.	I		1	Y	S	Y				G	50						
1839.	I									G	50						
1840.	O									G	52	2	1	20			
1841.	I						N			G	50	1	1	15			

FACTORY INSPECTION.

COLUMBIA COUNTY—Continued.

Running number	DOORS.		ELEVATORS				CLOSETS.			Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.	Machinery vats and pan guarded.	Properly provided.	Screened.						Steam.	Water.	Electric, Gas.
1842.	I	N	.....	.....	.....	.....	Y	Y	.....	G	52	.....	1	1	24	.....	.....
1843.	I	..	.....	.....	.....	.....	..	..	.....	G	52	.....	.....	1	1	8	.....
1844.	I	..	.....	.....	.....	.....	..	..	.....	G	50	.....	.....	1	1	.....	G 3
1845.	I	..	1	Y	T	Y	Y	..	.....	F	49	.....	1	1	26	.....	.....
1846.	I	..	.....	.....	.....	.....	N	..	.....	G	50	.....	.....	1	1	8	.....
1847.	I	..	.....	.....	.....	.....	Y	..	.....	.....	50	.....	.....	1	.....	.....	G 4
1848.	I	..	.....	.....	.....	.....	..	Y	Y	G	50	.....	.....	1	.....	.....	G 4
1849.	I	..	.....	.....	.....	.....	N	..	.....	.....	50	.....	1	1	125	.....	.....

OZAUKEE COUNTY.

1850.	S	N	.....	.....	.....	.....	.....	.....	.....	.....	52	.....	2	3	60	.....	.....
1851.	I	..	.....	.....	.....	.....	Y	Y	.....	G	52	.....	1	1	50	.....	.....
1852.	I	..	.....	.....	.....	.....	.....	.....	.....	G	52	.....	1	1	53	.....	.....
1853.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	26	.....	1	1	30	.....	.....
1854.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	26	.....	1	1	12	.....	.....
1855.	I	N	.....	.....	.....	.....	.....	.....	.....	G	42	.....	1	1	30	.....	.....
1856.	I	..	1	Y	B	Y	..	Y	.....	G	52	.....	1	1	20	.....	.....
1857.	I	..	.....	.....	.....	.....	.....	.....	.....	G	.....	.....	1	1	8	.....	.....
1858.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	52	.....	1	1	50	.....	.....
1859.	I	N	.....	.....	.....	.....	.....	.....	.....	G	52	.....	1	1	100	.....	.....
1860.	I	..	1	Y	B	Y	..	.....	.....	G	52	.....	1	1	40	.....	.....
1861.	O	..	5	Y	B	..	..	Y	Y	G	45	1	4	2	280	.....	.....

BAYFIELD COUNTY.

1862.	O	N	Y	Y	G	35	2	1	90
-------	---	---	-------	-------	-------	-------	---	---	-------	---	----	-------	---	---	----	-------	-------

MARINETTE COUNTY.

1863.	30
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	----	-------	-------	-------	-------	-------	-------

CRAWFORD COUNTY.

1864.	S	.....	.....	.....	.....	.....	Y	.....	.....	G	4	.....	1	1	30	.....	.....
1865.	I	N	.....	.....	.....	.....	.....	.....	.....	G	52	.....	1	1	100	.....	.....
1866.	I	..	.....	.....	.....	.....	.....	.....	.....	G	16	.....	1	1	18	.....	.....
1867.	I	..	.....	.....	.....	.....	.....	Y	.....	G	.....	.....	1	1	15	.....	.....
1868.	I	..	.....	.....	.....	.....	N	.....	.....	G	52	.....	1	1	10	.....	.....
1869.	I	..	.....	.....	.....	.....	.....	Y	.....	G	52	.....	.....	.....	.....	.....	.....
1870.	I	..	.....	.....	.....	.....	Y	.....	.....	G	52	.....	2	2	150	.....	.....
1871.	I	..	.....	.....	.....	.....	.....	Y	.....	G	36	.....	1	1	25	.....	.....
1872.	I	..	.....	.....	.....	.....	.....	.....	.....	G	52	.....	.....	1	.....	.....	2
1873.	.....	.....	.....	.....	.....	.....	Y	.....	.....	G	52	.....	1	1	2	.....	.....
1874.	I	N	.....	.....	.....	.....	..	Y	Y	G	52	.....	1	1	75	.....	.....
1875.	I	..	.....	.....	.....	.....	.....	.....	.....	G	52	.....	1	1	25	.....	.....
1876.	I	..	.....	.....	.....	.....	.....	.....	.....	G	26	.....	1	1	20	8	.....

PRENTICE.

Running number.	BUILDINGS.		PLANT.		HOURS PER WEEK.		EMPLOYEES.					STAIRWAYS.					
	1 to 2 stories.	3 or more stories.	Owned or leased.	Running or idle.	When running full time.	Date of inspection.	Full capacity.	Date of Inspection.					Number of fire escapes.	Outside.	Inside.	Openings guarded.	Have hand rails.
								Male.	Female.	Total.	Between 14 and 18 years.	Under 14 years.					
1877.	2	...	O	R	60	60	20	16	...	16	...	...	...	2	...	Y	...
1878.	4	2	O	..	60	60	90	70	...	70	...	...	...	2	4	Y	Y

QUINNESEC FALLS.

1879.	3	1	O	R	168	168	125	120	3	123	1	Y	Y
-------	---	---	---	---	-----	-----	-----	-----	---	-----	-----	-----	-----	---	---	---

RACINE.

1880.	2	1	O	R	60	60	12	8	...	8	...	...	3	2	Y	Y
1881.	1	...	L	..	60	60	200	8	116	124	15	...	...	3	...	..
1882.	1	...	O	..	168	168	10	10	...	10	...	...	...	...	..	..
1883.	4	...	O	..	60	60	60	60	...	60	...	...	...	2	Y	Y
1884.	2	...	L	..	60	60	20	8	...	8	1	...	...	1	..	..
1885.	3	...	O	..	60	60	200	183	1	184	35	...	...	...	..	..
1886.	6	...	O	..	55	45	90	49	...	49	2	...	...	3	Y	Y
1887.	2	1	O	..	66	66	14	12	...	12	...	1	...	1	..	..
1888.	1	...	O	..	119	119	75	65	...	65	...	...	1	1	..	..
1889.	...	1	O	..	60	60	75	4	8	12	...	...	1	1	..	..
1890.	4	...	O	..	60	60	75	45	...	45	...	...	...	...	..	..
1891.	...	...	O	..	60	60	16	10	...	10	...	...	...	...	..	..
1892.	3	3	O	..	60	60	300	300	...	300	...	3	1	11	Y	Y
1893.	7	7	O	..	60	48	700	600	...	600	...	7	5	12	..	..
1894.	7	1	O	..	57	57	150	20	75	95	...	1	...	3	..	..
1895.	1	...	O	R	60	60	12	12	...	12	...	...	...	...	..	..
1896.	P	...	L	..	60	60	17	16	...	16	7	...	...	...	..	..
1897.	2	1	O	..	60	60	30	15	...	15	...	...	...	2	Y	Y
1898.	3	1	O	..	60	60	50	43	...	43	...	...	...	1	..	..
1899.	1	...	L	..	60	60	5	2	3	5	...	...	1	1	..	..
1900.	2	2	O	..	60	48	60	32	...	32	...	...	...	1	..	..
1901.	3	1	L	..	60	60	85	25	...	25	...	2	1	5	..	..
1902.	...	1	L	I	60	60	12	3	...	3	...	...	...	...	..	..
1903.	3	3	O	R	60	60	240	239	1	240	9	...	6	4	7	..
1904.	5	...	O	..	60	54	75	12	...	12	...	4	...	2	..	Y
1905.	7	...	O	..	60	60	180	180	...	180	25	...	2	4	..	..
1906.	3	...	O	..	60	60	90	90	...	90	5	...	...	...	..	..
1907.	3	...	O	..	60	60	20	12	3	15	...	...	...	2	Y	Y
1908.	1	...	O	..	60	60	25	6	...	6	...	...	...	1	..	..
1909.	5	...	O	I	60	60	10	...	...	...	...	...	2	2	..	..
1910.	...	P	1	L	R	60	60	14	2	8	10	1	...	1	..	..
1911.	1	2	O	..	60	60	100	85	15	100	20	...	...	8	..	..
1912.	3	...	O	..	60	60	100	70	...	70	...	...	...	3	..	..
1913.	3	4	O	..	60	60	250	122	105	227	...	2	2	5	Y	Y
1914.	...	P	1	L	..	60	60	8	4	1	5	...	...	1	..	..
1915.	6	...	O	..	54	54	70	40	...	40	...	...	1	1	..	..
1916.	...	P	1	L	..	60	60	10	...	10	...	...	1	1	..	..
1917.	5	...	L	I	60	48	30	3	...	3	...	...	...	3	..	..
1918.	1	...	O	R	60	60	72	27	23	4	2	...	...	2	Y	..
1919.	1	1	O	..	60	60	16	16	...	16	...	...	...	2	..	..

FACTORY INSPECTION.

313

PRICE COUNTY.

Running number	DOORS.		ELEVATORS				Machinery vats and pan guarded.	CLOSETS.		Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER.		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.		Properly provided.	Screened.						Steam.	Water.	Electric, Gas
1877.	O	N	.....	.....	.....	.....	Y	Y	.....	G	40	.....	1	1	60	.....	.....
1878.	.....	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	4	4	100	.....	.....

MARINETTE COUNTY.

1879.	I	I	N	Y	Y	Y	G	13-52	2	2	215	6500
-------	---	---	---	-------	-------	-------	---	---	---	---	-------	-------	---	---	-----	------	-------

RACINE COUNTY.

1880.	I	S	N	.....	.....	.....	Y	Y	.....	G	52	.....	.....	.....	.....	.....	.....
1881.	O	.....	.....	1	Y	G	Y	N	.....	G	52	.....	1	3	44	.....	.....
1882.	.....	.....	.....	.....	.....	.....	.....	Y	.....	G	52	.....	5	2	500	.....	.....
1883.	S	I	.....	.....	.....	.....	.....	.....	.....	G	52	.....	1	1	75	.....	.....
1884.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	.....	.....	.....	.....	.....
1885.	.....	.....	.....	.....	.....	.....	.....	.....	.....	G	50	.....	2	1	65	.....	.....
1886.	I	.....	.....	2	Y	B	Y	.....	.....	G	38	.....	1	2	62	.....	.....
1887.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	50	.....	1	1	120	.....	.....
1888.	S	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	6	4	1650	.....	.....
1889.	O	.....	.....	.....	.....	.....	.....	.....	Y	G	52	.....	1	1	12	.....	.....
1890.	.....	.....	.....	.....	.....	.....	Y	N	.....	G	45	.....	1	1	12	.....	.....
1891.	.....	.....	N	.....	.....	.....	.....	.....	.....	G	52	.....	2	2	60	.....	.....
1892.	O	.....	.....	2	Y	B D	Y	.....	Y	G	52	.....	3	2	400	.....	.....
1893.	I	S	.....	5	Y	D G	.....	N	.....	G	50	.....	6	4	550	.....	.....
1894.	I	O	.....	1	.....	B	.....	Y	.....	G	48	.....	2	3	150	.....	.....
1895.	.....	.....	N	.....	.....	.....	Y	.....	.....	G	52	1	1	1	60	.....	.....
1896.	.....	.....	.....	.....	.....	.....	.....	Y	.....	G	52	.....	1	1	.....	.....	G 5
1897.	S	.....	.....	.....	.....	.....	.....	.....	.....	G	42	.....	1	1	10	.....	.....
1898.	I	.....	.....	1	Y	B	Y	N	.....	G	52	.....	1	1	60	.....	.....
1899.	I	.....	.....	.....	.....	.....	Y	.....	.....	G	52	.....	1	1	8	.....	.....
1900.	I	.....	.....	.....	Y	B	Y	N	.....	.....	50	1	2	1	75	.....	.....
1901.	I	S	.....	2	.....	3 D	.....	Y	.....	G	40	.....	2	1	100	.....	.....
1902.	I	S	.....	1	.....	D	.....	.....	.....	G	.....	.....	1	2	100	.....	.....
1903.	S	I	N	6	.....	D G	N	N	.....	F	29	1	2	1	200	.....	.....
1904.	S	I	.....	.....	.....	.....	.....	.....	.....	G	40	.....	1	2	35	.....	.....
1905.	I	S	.....	2	Y	B	Y	.....	Y	G	52	.....	1	1	60	.....	.....
1906.	.....	.....	.....	.....	.....	.....	.....	N	.....	G	52	.....	1	1	90	.....	.....
1907.	I	S	.....	.....	.....	.....	.....	.....	Y	G	40	.....	.....	.....	.....	.....	.....
1908.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	.....	.....	1	1	10	.....	.....
1909.	I	S	.....	.....	.....	.....	.....	.....	.....	G	22	.....	1	2	16	.....	.....
1910.	O	.....	.....	.....	.....	.....	N	.....	Y	G	52	.....	1	1	10	.....	.....
1911.	O	S	.....	1	Y	S D	Y	Y	.....	G	45	.....	1	1	60	.....	.....
1912.	I	.....	.....	.....	.....	.....	.....	.....	.....	.....	50	.....	1	1	100	.....	.....
1913.	I	S	.....	4	Y	B	Y	.....	Y	G	50	.....	5	3	180	.....	.....
1914.	I	.....	.....	1	.....	B	.....	Y	.....	G	52	.....	1	1	8	.....	.....
1915.	I	.....	.....	1	.....	B	.....	.....	.....	F	43	.....	2	2	130	.....	.....
1916.	I	.....	.....	.....	.....	.....	N	.....	.....	G	52	.....	.....	.....	.....	.....	G 8
1917.	.....	.....	.....	1	Y	B	Y	.....	.....	G	32	.....	1	1	50	.....	.....
1918.	O	.....	.....	1	.....	D	.....	Y	.....	G	52	.....	1	1	7	.....	15
1919.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	2	1	75	.....	.....

RACINE.

Running number.	BUILDINGS.		PLANT.		HOURS PER WEEK.		EMPLOYEES.						STAIRWAYS.				
	1 to 2 stories.	3 or more stories.	Owned or leased.	Running or idle.	When running full time.	Date of inspection.	Full capacity.	Date of Inspection.					Number of fire escapes.	Outside.	Inside.	Openings guarded.	Have hand rails.
								Male	Female.	Total.	Between 14 and 18 years.	Under 14 years					
1920.	1	1	L	R	60	60	25	20	.....	20	8	.....	.....	1	Y	Y
1921.	3	.....	L	.....	48	60	6	4	.....	4	.....	.....	.....	4	.....	.....
1922.	P 1	1	L	.....	60	60	25	14	3	17	.....	.....	.....	1	.....	.....
1923.	1	2	L	.....	60	60	350	195	155	350	.....	.....	.....	2	.....	.....
1924.	6	5	O	.....	60	60	500	290	1	291	1	.....	9	3	10	.....
1925.	1	.....	L	.....	60	60	7	1	6	7	.....	.....	.....	.....	.....	.....
1926.	2	2	O	.....	60	60	50	11	.....	11	.....	.....	1	1	Y	Y
1927.	2	2	L	.....	60	60	100	44	6	50	1	.....	.....	2	.....	.....
1928.	3	1	O	.....	60	60	25	15	.....	15	.....	.....	.....	2	.....	.....
1929.	1	.....	O	.....	60	60	25	17	.....	17	.....	.....	.....	.....	.....	.....
1930.	7	1	O	.....	60	60	80	70	.....	70	1	.....	1	.....	2	Y
1931.	5	.....	O	.....	60	60	150	50	.....	50	.....	.....	.....	2	.....	.....
1932.	1	.....	O	.....	60	60	25	6	.....	6	.....	.....	.....	.....	.....	.....
1933.	.....	2	L	.....	60	60	20	12	.....	12	.....	.....	1	4	Y	Y
1934.	9	3	O	.....	60	48	300	235	.....	235	20	.....	4	1	2	.....
1935.	.....	1	L	.....	60	60	100	18	60	78	.....	.....	.....	1	.....	.....
1936.	5	1	O	.....	60	60	220	200	.....	200	30	.....	.....	2	.....	.....
1937.	2	.....	O	.....	60	48	20	20	.....	20	7	.....	.....	1	.....	.....
1938.	.....	P 1	L	.....	60	60	25	2	12	14	.....	.....	.....	1	.....	.....
1939.	.....	P 1	O	.....	60	60	15	6	8	14	1	.....	.....	1	.....	.....
1940.	1	.....	L	.....	60	48	15	14	.....	14	.....	.....	.....	1	.....	.....
1941.	2	.....	L	.....	60	60	20	5	5	10	.....	.....	.....	1	.....	.....
1942.	2	1	L	.....	60	60	50	5	.....	5	.....	.....	.....	2	.....	.....
1943.	1	.....	L	.....	60	48	6	4	2	6	.....	.....	.....	1	Y	Y
1944.	14	8	O	.....	60	60	625	500	20	520	35	.....	4	2	8	.....
1945.	.....	3	O	.....	60	60	150	50	100	150	25	.....	2	.....	2	.....
1946.	1	.....	L	.....	60	60	25	15	.....	15	.....	.....	.....	.....	.....	.....
1947.	2	2	O	I	60	.....	40	.....	.....	.....	1	.....	.....	2	Y	Y
1948.	2	.....	O	I	60	60	8	5	5	5	.....	.....	.....	.....	.....	.....
1949.	1	1	O	R	60	60	5	5	.....	5	.....	.....	1	.....	1	Y
1950.	.....	5	O	R	48	48	300	165	12	177	15	.....	5	2	4	Y
1951.	4	1	O	.....	60	60	50	23	.....	23	.....	.....	.....	2	.....	.....
1952.	.....	1	L	.....	59	59	32	26	6	32	2	.....	.....	1	.....	.....
1953.	P 1	.....	L	.....	60	60	10	3	7	10	.....	.....	.....	.....	.....	.....
1954.	2	.....	O	.....	60	60	20	14	.....	14	.....	.....	.....	2	2	Y

REEDSBURG.

1955.	3	.....	O	R	60	60	5	4	.....	4	.....	.....	.....	2	Y	Y
1956.	3	1	O	.....	60	60	5	5	.....	5	.....	.....	.....	1	.....	.....
1957.	2	.....	O	.....	60	60	15	15	.....	15	.....	.....	.....	.....	.....	.....
1958.	2	.....	O	.....	60	60	7	7	.....	7	.....	.....	.....	1	Y	Y
1959.	5	.....	O	.....	60	60	20	13	.....	13	.....	.....	.....	1	.....	.....
1960.	2	.....	O	.....	144	144	5	5	.....	5	.....	.....	.....	.....	.....	.....
1961.	P 1	.....	L	.....	60	60	8	5	.....	5	1	.....	.....	.....	.....	.....
1962.	7	1	O	.....	60	60	149	46	49	95	4	.....	.....	2	.....	Y
1963.	3	.....	O	.....	60	60	8	6	.....	6	.....	.....	.....	.....	.....	.....
1964.	2	.....	O	.....	60	60	8	5	.....	5	.....	.....	.....	.....	.....	.....

FACTORY INSPECTION.

RACINE COUNTY—Continued.

Running number	DOORS.		ELEVATORS				Machinery vats and pan guarded.	CLOSETS.		Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER.		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.		Properly provided.	Screened.						Steam.	Water.	Electric, Gas
1920.	S	I	N				Y	Y		G							
1921.	I	O					N	Y	Y	G	40		1	1	15		
1922.	I	I								G	52		2	1	50		
1923.	I	I		1	Y	D	Y			G	52		2	1	50		
1924.	I	S		5	3	D	Y			G	37		6	3	176		
1925.							Y			G	52		1	1	10		
1926.	I	Z		1	Y	B	Y	N		G	52		1	1	50		
1927.	I	Z		1		B			Y	G	40		2	1	30		
1928.	I	Z		1		D		Y			30		2	1	45		
1929.											52						
1930.	I	S		1	Y	B	N		Y	Y	G	52	2	1	275		
1931.	S	I						N			52		1	2	50		
1932.							Y				G	52					
1933.	S			1	Y	G	Y		Y		G	52					G10
1934.	S	I		3		3	G	N			G	46	4	4	400		
1935.	S			1	Y	B		Y		Y	G	48	1	1	30		
1936.	Y	N		1		D					G	52	1	2	65		
1937.	I	I									G	52	1	1	30		
1938.	I	O		1	Y	D	N	N		Y	G	52		1	5		
1939.	O			1			Y				G	52					
1940.	S										G	40	1	1	4		
1941.	S	N									G	50					
1942.	O			1	Y	B	Y	N			F	50	1	1	40		
1943.	O			1		G		Y		Y	52	1	1	60			
1944.	S			6		3	B	N			G	45	2	2	250		
1945.	I			1		B					G	40	2	2	60		
1946.								Y			G	52	1	1	4		
1947.	I			3	Y	B	Y				G	36	1	1	60		
1948.									N		G	52	1	1	35		
1949.	I			1	Y		N	Y			G	50	1	1	40		
1950.	I	S	N	4	Y	D	B	Y	Y	Y	G	35	2	1	150		
1951.				1		D						50	2	1	150		
1952.	O							Y		Y	G	52		1			30
1953.											G	52					
1954.	I						N				G	51	1	1	75		

SAUK COUNTY.

1955.	I	S	N					Y	Y		G	52	1	1	8		
1956.											G		1	1	75		
1957.											G	51	1	1	25		
1958.	I								Y		G	52			4		7
1959.	I							Y			G	47	1	1	45		
1960.								N			G	52					
1961.								N			G	52			4		
1962.				1	Y	G	Y	N		Y	G	35	2	1	85	85	
1963.								N			G	52	1	1	15		
1964.	Y							Y			G	32	2	2	98		

MANITOWOC COUNTY.

Running number	DOORS.		ELEVATORS				Machinery vats and pan guarded.	CLOSETS.		Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.		Properly provided.	Screened.						Steam.	Water.	Electric, Gas.
1965.	I	N	.....	.....	.....	.....	Y	.....	.....	G	52	.....	1	1	15	.....	.....
1966.	I	O	.....	.....	.....	.....	.....	.....	.....	G	52	.....	1	1	35	.....	.....
1967.	O	.....	.....	.....	.....	.....	N	.....	.....	F	.....	.....	1	1	60	.....	.....
1968.	O	S	.....	.....	.....	.....	.....	.....	.....	G	26	.....	1	1	50	.....	.....

ONEIDA COUNTY.

1969.	I	N	.....	.....	.....	.....	Y	Y	.....	G	30	.....	1	1	75	.....	.....
1970.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10	3	.....	.....	.....
1971.	I	N	.....	.....	.....	.....	Y	.....	.....	G	33	.....	7	2	130	.....	.....
1972.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	24	.....	4	1	144	.....	.....
1973.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	40	.....	3	2	150	.....	.....
1974.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24	.....	.....	.....	.....	.....	.....
1975.	I	.....	.....	.....	.....	.....	.....	.....	.....	.....	52	.....	3	2	180	.....	.....
1976.	O	.....	.....	.....	.....	.....	Y	.....	.....	G	52	.....	.....	.....	5	.....	.....
1977.	S	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	2	1	200	.....	.....
1978.	I	N	.....	.....	.....	.....	.....	.....	.....	G	52	.....	.....	.....	.....	.....	.....
1979.	I	.....	.....	.....	.....	.....	Y	.....	.....	.....	52	.....	1	1	8	.....	.....
1980.	I	.....	.....	.....	.....	.....	.....	Y	.....	G	52	.....	.....	.....	5	.....	.....
1981.	O	.....	.....	.....	.....	.....	.....	.....	Y	G	52	.....	1	1	35	.....	.....
1982.	O	.....	.....	.....	.....	.....	N	.....	.....	G	50	.....	1	1	120	.....	.....
1983.	I	.....	.....	.....	.....	.....	Y	.....	.....	G	35	.....	1	1	75	.....	.....
1984.	.....	.....	.....	.....	.....	.....	.....	.....	.....	G	24	.....	5	1	120	.....	.....
1985.	I	N	.....	.....	.....	.....	.....	.....	.....	G	52	.....	.....	.....	.....	.....	.....
1986.	.....	.....	.....	.....	.....	.....	.....	.....	.....	G	35	.....	1	2	160	.....	.....
1987.	O	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	1	1	70	.....	.....

TAYLOR COUNTY.

1988.	I	N	.....	.....	.....	.....	N	Y	.....	G	34	.....	2	1	100	.....	.....
1989.	I	O	.....	.....	.....	.....	.....	.....	.....	G	52	.....	9	3	120	.....	.....
1990.	O	.....	.....	.....	.....	.....	.....	.....	.....	G	.....	.....	1	1	30	.....	.....
1991.	O	.....	.....	.....	.....	.....	.....	Y	.....	G	.....	.....	8	1	350	.....	.....

BARRON COUNTY.

1992.	S	N	.....	.....	.....	.....	Y	Y	.....	G	20	.....	1	1	75	.....	.....
1993.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	16	.....	1	1	25	.....	.....
1994.	O	.....	.....	.....	.....	.....	.....	.....	.....	G	29	.....	11	4	575	500	.....
1995.	O	.....	.....	.....	.....	.....	N	.....	.....	G	28	.....	1	1	50	.....	.....
1996.	.....	.....	.....	.....	.....	.....	Y	.....	.....	G	30	.....	1	1	60	.....	.....

MARATHON COUNTY.

1997.	O	.....	.....	.....	.....	.....	Y	.....	.....	G	4	.....	2	1	75	.....	.....
1998.	.....	N	.....	.....	.....	.....	.....	.....	.....	G	12	.....	.....	.....	40	.....	.....

RIPON.

Running number.	BUILDINGS.		PLANT.		HOURS PER WEEK.		EMPLOYEES.					Number of fire escapes.	STAIRWAYS.				
	1 to 2 stories.	3 or more stories.	Owned or leased.	Running or idle.	When running full time.	Date of inspection.	Full capacity.	Date of Inspection.					Outside.	Inside.	Openings guarded.	Have hand rails.	
								Male.	Female.	Total.	Between 14 and 18 years.						Under 14 years.
1999.	1		L	R	60	60	5	5						1	1	Y	Y
2000.	2		O		72	72	5	5						1	1		
2001.	2		O		60	60	7	7						1	1	Y	Y
2002.	1		O		60	60	5	5	3					1	1	Y	Y
2003.	2		O		60	60	6	6						2	1		
2004.	2		O		60	60	45	20	18	38					2		Y
2005.	3		O		60	60	8	7	1	8	1	2		1	1		
2006.	1	1	O		60	60	4	4		4				1	1		
2007.	2		O		60	60	150	15	70	85	12	4		1	3		
2008.	1		O		60	60	6	2		2				1	1		
2009.	1		O	I	60		8	8		8				2			
2010.	P 1		O	R	60	60	5	5		5				1	1		

RIVER FALLS.

2011.	3		O	R	60	60	16	16		16	1						
2012.	3	1	L		60	60	4	3		3				1	3	Y	Y

ROCK ELM.

2013.	2		O	R	60	60	10	10		10							
2014.	1		O		60	60	25	25		25							
2015.	1		O	I			7										

RICHLAND CENTER.

2016.	3		O	I	60		20									Y	Y
2017.	P 1		L	R	60	60	5	3	2	5					1		
2018.	1		O		60	60	7	5		5	2						
2019.	10		O		60	60	50	35		35					2	Y	Y
2020.	2		O		60	60	10	10		10							
2021.	1	2	O	I	60		5						1		1	Y	Y
2022.	3		O	R	60	60	12	12		12							
2023.	3		O		66	66	2	2		2							
2024.	1		O		60	60	5	3	2	5					1	Y	Y
2025.	1		L		60	60	5	3	1	4	1				1		

SANBORN.

2026.	3		O	I	60		12										
-------	---	--	---	---	----	--	----	--	--	--	--	--	--	--	--	--	--

SAXON.

2027.	3		O	I	60		10	2		2							
-------	---	--	---	---	----	--	----	---	--	---	--	--	--	--	--	--	--

SCHLESSINGERVILLE.

2028.	1		O	R	60	60	18	6		6		6					
2029.	5		O		60	60	20	7		7							
2030.	5	3	O		60	60	13	11		11					2	Y	Y

FOND DU LAC COUNTY.

Running number	DOORS.		ELEVATORS.				Machinery vats and pan guarded.	CLOSETS.			Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.		Properly provided.	Screened.	Sanitary condition.					Steam.	Water.	Electric, Gas.
1999.	I	N					N	Y		G	52			1			2
2000.	I									G	52						
2001.											52		2	3	140		
2002.	I								Y	G	52		1	1	8		
2003.	O						N			G	50		1	1	12		14
2004.	I							Y		G			1	1	8		
2005.	I		1	Y	T	Y				F	52		1	1			
2006.	I									G	52		1	1	25		
2007.	O		1	Y	T	N			Y	G	40		1	1	35		
2008.	O									G	25		1	1	35		
2009.	S										50		1	1	75		
2010.	I									G	52						

PIERCE COUNTY.

2011.	I	N					Y	Y			49						
2012.	I										47						65

PIERCE COUNTY.

2013.		N					Y	Y			9		1	1	50		
2014.							N			F	22		1	1	35		
2015.											10	1	1	1	25		

RICHLAND COUNTY.

2016.	I	N					Y	Y	Y		40		1	1	45		
2017.	I									G	52				5		
2018.	I									G	26	1	1	1	16		
2019.	O							Y		G	16		2	1	400		
2020.	I									G	26	1					125
2021.	I									G	26						100
2022.	I									G	12		1	1	50		
2023.	I									G	52		2	1	100		
2024.	I						Y	Y	Y		52		1	1	10		
2025.	I									G	52						

ASHLAND COUNTY.

2026.							Y				32		1	1	30		
-------	--	--	--	--	--	--	---	--	--	--	----	--	---	---	----	--	--

IRON COUNTY.

2027.	O	N					Y	Y					2	1	50		
-------	---	---	--	--	--	--	---	---	--	--	--	--	---	---	----	--	--

WASHINGTON COUNTY.

2028.							Y				16						
2029.											25		1	1	25		
2030.	O	N								G	52		2	1	40		

SCOFIELD.

Running number.	BUILDINGS.		PLANT.		HOURS PER WEEK.		EMPLOYEES						STAIRWAYS.				
	1 to 2 stories.	3 or more stories.	Owned or leased.	Running or idle.	When running full time.	Date of inspection.	Date of Inspection.						Number of fire escapes.	Outside.	Inside.	Openings guarded.	Have hand rails
							Full capacity.	Male	Female	Total	Between 14 and 18 years.	Under 14 years.					
2031.	4	.....	O	R	120	120	125	115	.....	115	8	.....	1	1	N	N

SHULLSBURG.

2032.	3	.....	O	R	60	60	2	2	.....	2	.....	.....	1	Y	Y
2033.	P 2	.....	L	..	60	60	5	1	3	4	.....	.....	1	.....	.....

SEYMOUR.

2034.	3	.....	O	R	60	60	8	3	.....	3	.....	.....	.....	Y	Y
2035.	4	.....	O	..	60	60	16	16	.....	16	2	.....	2	1	.....
2036.	4	.....	O	..	60	60	2	2	.....	2	.....	.....	1	1	Y Y
2037.	5	.....	O	..	60	60	15	9	.....	.....	1	.....	.....	.....	.....
2038.	2	1	O	..	60	60	5	3	.....	3	.....	.....	1	.....	.....

SHAWANO.

2039.	.....	1	O	R	60	60	5	3	.....	3	.....	.....	1	Y	Y
2040.	5	.....	O	..	60	60	10	6	.....	6	.....	.....	1	1	.. ..
2041.	3	.....	O	I	66	.....	40	.....	.....	.....	.....	.....	1	.....	.....
2042.	2	1	O	R	60	60	10	7	.....	7	.....	.....	2	Y	Y
2043.	1	.....	O	..	60	36	7	1	2	3	.....	.....	.....	.....	.....
2044.	5	.....	O	..	144	144	21	21	.....	21	.....	.....	1	Y	Y

SHEBOYGAN.

2045.	1	.....	O	R	60	60	6	6	.....	6	.....	.....	1	2	Y Y
2046.	2	.....	O	..	60	60	30	28	.....	28	.....	.....	1	.....	.....
2047.	1	2	O	..	60	60	135	117	8	125	15	.....	1	2	.....
2048.	2	1	O	..	60	60	35	15	.....	15	.....	.....	1	.....	.....
2049.	1	.....	L	..	60	60	18	3	7	10	.....	.....	.....	.....	.....
2050.	1	.....	L	..	60	60	6	1	5	6	.....	.....	.....	1	Y Y
2051.	1	.....	O	..	60	60	22	22	.....	22	.....	.....	.....	1	.....
2052.	5	3	O	..	60	60	394	350	44	394	40	.....	2	3	8
2053.	3	1	O	..	60	60	416	374	42	416	6	.....	1	1	1
2054.	1	.....	L	..	60	60	11	11	.....	11	.....	.....	1	1	.....
2055.	1	3	O	..	66	60	160	160	.....	160	30	.....	.....	2	Y Y
2056.	1	.....	O	..	60	60	40	15	.....	15	1	.....	.....	1	.....
2057.	2	.....	O	..	60	48	20	17	3	20	10	.....	.....	3	.....
2058.	.....	P 1	O	..	60	60	9	9	.....	9	.....	.....	.....	.....	.....
2059.	2	2	O	..	60	60	150	130	4	134	6	.....	2	.....	2
2060.	1	2	O	..	60	60	230	179	.....	179	.....	.....	1	1	3
2061.	1	1	O	..	60	60	8	8	.....	8	.....	.....	1	1	1
2062.	2	3	O	..	60	60	24	24	.....	24	.....	.....	.....	6	.....
2063.	P 1	.....	O	..	60	60	12	5	7	12	.....	.....	.....	1	.....
2064.	1	.....	O	..	60	60	5	5	.....	5	.....	.....	.....	.....	.....
2065.	4	.....	O	..	60	60	40	30	.....	30	.....	.....	1	2	.....
2066.	.....	1	O	..	60	60	28	28	.....	28	1	.....	.....	2	Y Y
2067.	5	.....	O	..	60	60	100	77	.....	77	.....	.....	.....	1	3
2068.	1	5	O	..	60	60	850	600	.....	600	.....	.....	5	1	8
2069.	4	.....	O	..	60	60	39	20	.....	20	.....	.....	.....	2	.....

FACTORY INSPECTION.

321

MARATHON COUNTY.

Running number	DOORS.		ELEVATORS				CLOSETS.		Sanitary condition.	Weeks in operation, 1886.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.	Machinery vats and pan guarded.	Properly provided.						Screened.	Steam.	Water.	Electric, Gas
2031.	N						N	Y	G	50		6	2			

LAFAYETTE COUNTY.

2032.	O	N					Y		G	26		1	1	10		
2033.							Y		G	52				2		

OUTAGAMIE COUNTY.

2034.		N					Y	Y	G	45		1	1	10		
2035.							N		G	32		2	1	45		
2036.	O						Y		G	52				2 1/2		
2037.	O						N		G			1	1	50		
2038.							Y		G	40		1	1	50		

SHAWANO COUNTY.

2039.	O	N							G	52						200
2040.	O						Y		G						25	
2041.							N		G	32		2	1		100	
2042.	O	N							G	52		1	1		60	
2043.	O						Y	Y	G	12		1	1		10	
2044.	O	N							G	52		2				

SHEBOYGAN COUNTY.

2045.	O		1	Y	D	Y	Y		G	52		1	1	8		
2046.	S	N	1	Y					G	48		1	1	100		
2047.	I		1	Y	D		N	Y	G	43		2	1	65		
2048.			1	Y	D		Y		G	52		1	1	30		
2049.		N							G	52		1	1	8		
2050.	O						Y		G	52		1	1	8		
2051.	O						Y		G	51		1	2			12
2052.	S		1	Y	G	Y		Y	G	45		3	2	250		
2053.	O		1	Y					G	45		5	1	300		
2054.									G	52		1	1			1
2055.	O	N	2	Y	B	Y		Y	G	40		3	1	200		
2056.	I								G	45						1
2057.	O		1	Y	D	Y		Y	G	52		1				36
2058.	O								G	52		1	1	30		
2059.	I		1	Y	B	Y		Y	G	52		2	1	135		
2060.	S		1	Y	D				F	52		2	1	100		
2061.	I		2	Y	D				G	52						
2062.	I								G	52		2	2	140		M 1
2063.	I	N							G	52						
2064.									G	52		1	1	30		
2065.									G	52			1			30
2066.	Z	N	1	Y	D	Y		Y	G	52						
2067.	Z		2	Y	D				F	50		1	1	65		
2068.	Z		4	Y	G		Y		G	49		8	3	500		
2069.									G	51						25

MONROE COUNTY.

Running number.	DOORS.		ELEVATORS.				CLOSETS.			Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER.		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.	Machinery vats and pan guarded.	Properly provided.	Screened.						Steam.	Water.	Electric, G ^a .
2105.	I	N	1	Y	...	N	N	Y	...	G	41	...	2	1	150	100	...
2106.	...	..	...	...	...	...	Y	...	...	G	52	...	1	1	20	...	...

PIERCE COUNTY.

2107.	...	...	...	...	...	...	N	Y	...	F	30	...	1	1	25	...	...
2108.	...	...	...	...	...	...	Y	..	...	G	52	...	1	2	45	...	...

MARATHON COUNTY.

2109.	O	G	16	...	1	1	65
-------	---	-----	-----	-----	-----	-----	-----	-----	-----	---	----	-----	---	---	----	-----	-----

CHIPPEWA COUNTY.

2110.	S	N	...	...	...	...	Y	Y	...	G	32	...	15	5	550	...	...
2111.	O	..	...	...	...	...	..	N	...	G	25	...	1	1	75	...	...
2112.	O	..	...	...	...	...	..	...	...	G	52	...	...	...	...	...	...
2113.	S	..	1	Y	D	Y	Y	..	...	G	10	...	4	4	200	...	...

VILAS COUNTY.

2114.	Y	Y	...	G	32	...	7	2	875
-------	-----	-----	-----	-----	-----	-----	---	---	-----	---	----	-----	---	---	-----	-----	-----

POLK COUNTY.

2115.	I	N	...	...	...	...	Y	Y	...	G	52	...	...	...	...	22	...
2116.	S	..	...	...	...	...	..	..	...	G	25	...	...	...	50	...	...
2117.	...	...	...	...	...	...	..	N	...	G	36	...	1	1	35	...	...
2118.	I	N	...	...	...	...	N	Y	...	G	30	...	1	1	20	...	...
2119.	..	..	...	...	...	...	Y	N	...	G	30	...	1	1	10	...	...

PORTAGE COUNTY.

2120.	O	N	...	...	...	...	Y	Y	Y	G	45	...	1	1	25	...	...
2121.	...	...	...	...	...	...	..	..	...	G	52	...	2	1	50	...	...
2122.	S	N	...	...	...	...	..	..	...	G	45	...	1	1	70	...	...
2123.	I	..	...	...	...	...	..	..	...	G	52	...	1	1	150	...	...
2124.	O	..	...	...	...	...	Y	..	...	G	52	...	1	1	40	...	...
2125.	...	...	...	...	...	...	..	..	...	G	22	...	1	1	35	...	...
2126.	...	N	...	...	...	...	..	..	...	G	50	...	1	1	100	...	...
2127.	...	...	...	...	...	...	Y	..	...	G	52	...	1	1	25	...	...
2128.	...	...	...	...	...	...	..	..	...	G	52	...	1	1	60	...	...
2129.	...	...	...	...	...	...	Y	..	...	G	44	...	1	1	80	...	...
2130.	...	...	...	...	...	...	..	..	...	G	52	...	1	1	25	...	...
2131.	...	...	...	...	...	...	..	..	...	G	42	...	1	1	85	...	...
2132.	...	...	...	...	...	...	N	..	...	G	52	...	4	2	160	...	...
2133.	...	...	...	...	...	...	..	..	...	G	52	...	2	2	185	...	...

OCONTO COUNTY.

2134.	Y	Y	...	G	51	...	6	1
-------	-----	-----	-----	-----	-----	-----	---	---	-----	---	----	-----	---	---	-----	-----	-----

DANE COUNTY.

Running number	DOORS.		ELEVATORS.				CLOSETS.		Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER.		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.	Machinery vats and pan guarded.	Properly provided.						Screened.	Steam.	Water.	Electric, Gas.
2135.	N	N	.....	.....	.....	.....	N	Y	.....	G	52	.....	1	1	30	.....
2136.	..	..	.....	.....	.....	.....	Y	Y	.....	G	52	.....	1	1	3	.....
2137.	..	..	.....	.....	.....	.....	Y	Y	.....	G	52	.....	2	1	200	.....
2138.	S	N	2	Y	B	Y	Y	Y	.....	G	52	.....	2	1	200	.....

MARATHON COUNTY.

2139.	.....	.....	.....	.....	.....	.....	.....	.....	.....	G	36	.....	2	1	80	.....
2140.	S	N	.....	.....	.....	.....	Y	.....	.....	G	36	.....	1	1	40	.....
2141.	N	.....	.....	.....	.....	.....	.....	.....	.....	G	20	.....	1	1	35	.....

CRAWFORD COUNTY.

2142.	I	N	.....	.....	.....	.....	.....	Y	Y	.....	G	12	.....	.....	.....	.....
2143.	O	..	.....	.....	.....	.....	.....	.....	.....	G	40	1	1	1	50	.....
2144.	O	..	.....	.....	.....	.....	.....	.....	.....	G	52	1	.....	.....	40	.....
2145.	S	.....	.....	.....	.....	.....	.....	.....	.....	G	.....	.....	1	1	50	.....

CLARK COUNTY.

2146.	O	N	N	Y	G	35	2	2	30
-------	---	---	-------	-------	-------	-------	---	---	-------	---	----	-------	---	---	----	-------

TAYLOR COUNTY.

2147.	O	N	N	Y	F	32	1	1	50
-------	---	---	-------	-------	-------	-------	---	---	-------	---	----	-------	---	---	----	-------

CRAWFORD COUNTY.

2148.	O	Y	G	26	1	1	25
-------	---	-------	-------	-------	-------	-------	---	-------	-------	---	----	-------	---	---	----	-------

SAUK COUNTY.

2149.	I	N	N	Y	Y	G	12	2	1	20
-------	---	---	-------	-------	-------	-------	---	---	---	---	----	-------	---	---	----	-------

CHIPPEWA COUNTY.

2150.	S	N	.....	.....	.....	.....	Y	Y	.....	G	22	.....	5	3	180	.....
2151.	I	..	.....	.....	.....	.....	..	..	.....	G	32	.....	6	2	350	.....

OUTAGAMIE COUNTY.

2152.	Y	N	Y	G	2	2	40
-------	---	---	-------	-------	-------	-------	---	-------	-------	---	-------	-------	---	---	----	-------

STURGEON BAY.

Running number.	BUILDINGS.		PLANT.		HOURS PER WEEK.		EMPLOYEES.						STAIRWAYS.				
	1 to 2 stories.	3 or more stories.	Owned or leased.	Running or idle.	When running full time.	Date of inspection.	Full capacity.	Date of Inspection.				Number of fire escapes.	Outside.	Inside.	Openings guarded.	Have hand rails.	
								Male	Female.	Total.	Between 14 and 18 years.						Under 14 years
2153.	1	.....	O	R	60	60	7	6	1	7	.....	.....	.....	.....	.....	.....	.....
2154.	2	.....	O	..	66	66	35	35	.....	35	.....	.....	.....	.....	.....	.....	.....
2155.	1	.....	L	..	60	60	5	3	2	5	.....	.....	.....	.....	1	Y	Y
2156.	3	.....	O	..	60	60	6	2	.....	6	.....	.....	.....	.....	.....	.....	.....
2157.	2	.....	O	I	60	.....	5	.....	.....	.....	.....	.....	.....	1	Y	Y	.....
2158.	4	.....	O	R	60	60	30	30	.....	30	.....	.....	.....	1	1	Y	Y
2159.	4	.....	O	..	144	144	100	75	25	100	.....	.....	1	1	1	Y	Y
2160.	4	.....	O	..	60	60	70	30	.....	30	.....	.....	.....	1	1	.....	.....
2161.	4	.....	O	..	60	60	23	21	.....	21	.....	.....	1	1	.....	.....	.....
2162.	2	.....	O	..	66	66	2	2	.....	2	.....	.....	.....	1	.....	.....	.....
2163.	3	.....	O	..	60	60	15	9	.....	9	.....	1	.....	1	1	Y	Y

SUPERIOR.

2164.	1	1	O	R	144	144	70	70	.....	70	.....	.....	1	.....	2	.....	Y
2165.	2	.....	O	..	144	144	37	37	.....	37	.....	.....	.....	.....	2	.....	.....
2166.	4	2	O	..	144	144	100	.....	.....	.....	.....	.....	.....	2	.....	Y	.....
2167.	.....	.....	O	..	60	60	24	24	.....	24	.....	.....	.....	.....	.....	.....	.....
2168.	3	.....	O	I	60	.....	60	1	.....	1	15	6	.....	.....	2	Y	Y
2169.	3	4	O	R	144	144	75	75	.....	75	.....	.....	3	.....	2	.....	.....
2770.	1	.....	O	..	60	60	23	23	.....	23	.....	.....	.....	.....	.....	.....	.....
2171.	4	.....	O	..	60	60	20	20	.....	20	.....	.....	.....	1	1	Y	Y
2172.	2	.....	O	..	144	144	40	40	.....	40	.....	.....	2	.....	2	.....	.....
2173.	9	.....	O	..	60	60	75	63	.....	63	2	1	.....	.....	.....	.....	.....
2174.	7	3	O	..	60	72	275	202	38	240	25	2	3	1	5	Y	Y
2175.	1	.....	O	..	60	60	6	6	.....	6	.....	.....	.....	.....	1	.....	.....
2176.	11	.....	O	..	60	48	1200	500	.....	500	6	.....	.....	2	5	Y	.....
2177.	1	.....	O	..	60	60	6	6	.....	6	.....	.....	.....	.....	.....	.....	.....
2178.	P 1	.....	L	..	60	60	15	5	8	13	3	.....	.....	.....	.....	.....	.....
2179.	4	.....	L	..	60	60	135	135	.....	135	.....	.....	.....	.....	.....	.....	.....
2180.	P 1	.....	L	..	60	60	5	2	.....	2	.....	.....	.....	.....	.....	.....	.....
2181.	2	.....	L	..	60	60	3	3	.....	3	.....	.....	.....	.....	.....	.....	.....
2182.	P 1	.....	L	..	60	60	25	8	17	25	1	.....	1	.....	1	Y	Y
2183.	3	.....	L	..	60	60	20	20	.....	20	.....	.....	.....	.....	.....	.....	.....
2184.	.....	.....	L	..	60	60	125	30	.....	30	.....	.....	.....	.....	.....	.....	.....
2185.	P 1	.....	L	..	60	60	3	3	.....	3	.....	.....	.....	.....	.....	.....	.....
2186.	1	.....	L	..	60	60	5	5	.....	5	1	.....	.....	.....	.....	.....	.....
2187.	1	.....	L	..	60	60	4	4	.....	4	.....	.....	.....	.....	.....	.....	.....
2188.	3	2	O	..	144	144	22	22	.....	22	.....	.....	.....	2	Y	Y	.....
2189.	4	.....	L	I	60	.....	30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2190.	4	.....	L	..	60	60	60	60	.....	60	5	3	.....	1	2	Y	.....
2191.	P 1	.....	L	..	60	60	10	8	.....	8	.....	.....	.....	.....	.....	.....	.....
2192.	8	.....	L	..	60	60	68	68	.....	68	.....	.....	.....	.....	2	.....	Y
2193.	8	.....	O	..	60	60	120	120	.....	120	.....	.....	.....	.....	.....	.....	.....
2194.	3	.....	L	..	60	60	9	3	.....	3	.....	.....	.....	.....	.....	.....	.....
2195.	1	.....	L	..	60	60	7	7	.....	7	.....	.....	.....	.....	.....	.....	.....
2196.	P 1	.....	L	..	60	60	10	3	7	10	.....	.....	.....	.....	.....	.....	.....
2197.	1	.....	L	..	54	54	40	36	4	40	3	.....	.....	.....	2	Y	Y
2198.	1	.....	L	..	60	60	12	12	.....	12	.....	.....	.....	1	.....	.....	.....

DOOR COUNTY.

Running number	DOORS.		ELEVATORS				Machinery vats and pan guarded.	CLOSETS.		Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.		Properly provided.	Screened.						Steam.	Water.	Electric, Gas.
2153.	I	N					Y			G	52		1	1	2		
2154.	O									G	39				120		
2155.	I							Y	Y	G	52				4		
2156.	I									G	52				8		
2157.	I									G	12		1	1	25		
2158.	S									G	40		5	1	170		
2159.	S		1	Y	B	Y	Y	Y	Y	G	7			1	30		
2160.	S									G	23				65		
2161.	S									G	52				75		
2162.	I	N								G	52			2	150		
2163.	S									G	26		1	1	56		

DOUGLAS COUNTY.

2164.		N	1	Y	G	Y	N	Y		G	50	N	3	2	500		
2165.	S		1		DB					G	52		3	2	385		
2166.	S	I	1		AG		Y			G	35		5	5			
2167.										G	52		3	3	150		
2168.										G	16	N	1	1	40		
2169.			1	Y	DB	Y				G	45		3	2	600		
2170.	O									G	52	N					
2171.	I									G	45						
2172.	S		1	Y	DB	Y	Y			G	52		3	2	385		
2173.							N			G	52		2	1	100		
2174.			2	Y	DB	Y	Y		Y	G	50	N	4	3	340		
2175.	I		1		D					G	1		1	1	75		
2176.	O	S								G	52		3	4	220		
2177.	I								Y	G	52						
2178.										G	45						
2179.										G	28	N	1	1	45		
2180.										G	45						
2181.										G	45						
2182.	O		1	Y	D	Y	Y		Y	G	52	N	1	1	25		
2183.										G	52						
2184.											37						
2185.		N					Y				52						
2186.	I							Y		G	52	N					
2187.											52						
2188.	S	O											2	1	300		
2189.	S							Y		G	24	N	1	1	40		
2190.	S	I								F	35		1	1	30		
2191.	I									G	52						
2192.							Y			G	52		2	1	30		
2193.	S									G	35						
2194.										G	52						
2195.										G	52						
2196.		N							Y				1	1	10		
2197.	O						N			G	52						
2198.	I		1	Y	D	Y	Y			G	52						15

DOUGLAS COUNTY—Continued.

Running number	DOORS.		ELEVATORS				Machinery vats and pan guarded.	CLOSETS.		Sanitary condition	Weeks in operation, 1896.	Number of accidents.	Number of boilers	Number of engines.	HORSE-POWER		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.		Properly provided.	Screened.						Steam.	Water.	Electric, Gas
2199.	S	I	N	1	Y	S	G	Y	Y	Y	45	4	2	750			
2200.	O	N	S	1	Y	A	B	Y	Y	G	52	5	3	1000			
2201.										G	52	N		1	G	5	
2202.										G	52						
2203.	N							Y			52						
2204.	S	O								G	52	N	6	4	900		
2205.										G	45						
2206.	I									G	52	N			G	7	
2207.										G	52						
2208.	N									G	52		1	1	75		
2209.										G							
2210.									Y		52						
2211.									Y	G	52						
2212.								Y		G	52	N	3	10	275		
2213.	I	N						N		G	52		3	17	510		
2214.				1	Y		Y			G	45		1	2	375		
2215.								Y		G	52						
2216.	I	N								G	52	N					
2217.	S	I						N		G	52	3	4	2	300		
2218.										G	52						
2219.	O	N							Y	G	45						
2220.										G	52						
2221.	I			1	Y	B	Y	Y	Y	G	52		1		12	30	
2222.										G	52						
2223.	O	S								G	52		6	3	500		
2224.										G	52		2	2	100		
2225.		N						N		G	20		1	1	15		
2226.										G							
2227.	I							Y	Y	G	50		2	4	210		
2228.									Y								
2229.								Y		G	38		1	1	60		
2230.	O									G							
2231.	S	I						N		F	45		7	3	635		
2232.										G	52		2	6	150		
2233.										G	52						
2234.										G	45						
2235.	I									G	52						
2236.	S	I		1	Y	B	Y	N		G	45	1	2	2	1035		
2237.										G	52						
2238.	I									G	52						
2239.				1	Y		Y	Y		G	52		1	1	35		
2240.										G							
2241.	I									G	52						
2242.		N						Y		G	52		1	2	12		
2243.	O									G	52		2	7	270		
2244.	I									G	52			1		5	
2245.	I									G	52		1	1	1 1/2		
2246.	I									G	45						
2247.	I									G		1				G20	
2248.	S	O						Y	Y	G	52		1	1	7		

SUPERIOR.

Running number.	BUILDINGS.		PLANT.		HOURS PER WEEK.		EMPLOYEES.					STAIRWAYS.				
	1 to 2 stories.	3 or more stories.	Owned or leased.	Running or idle.	When running full time.	Date of inspection.	Full capacity.	Date of Inspection.				Number of fire escapes.	Outside.	Inside.	Openings guarded.	Have hand rails.
								Male	Female.	Total.	Between 14 and 18 years.					
2249.	7	.....	O	R	60	60	75	70	.....	70	.....	.....	.....	.....	.....	.....
2250.	4	.....	O	O	60	60	60	12	.....	12	.....	.....	.....	.....	.....	.....
2251.	1	.....	L	L	60	60	3	3	.....	3	.....	.....	.....	.....	.....	.....
2252.	1	.....	L	L	60	60	6	3	.....	3	.....	.....	.....	.....	.....	.....
2253.	1	1	L	L	60	60	50	30	.....	30	.....	.....	.....	.....	.....	.....
2254.	4	.....	O	O	60	60	45	45	.....	45	.....	.....	.....	.....	.....	.....
2255.	1	.....	O	O	60	60	3	2	.....	2	.....	.....	.....	.....	.....	.....
2256.	1	.....	O	O	60	60	3	3	.....	3	.....	.....	.....	.....	.....	.....
2257.	1	.....	O	O	60	60	4	4	.....	4	.....	.....	.....	.....	.....	.....
2258.	.....	P 1	O	O	60	60	4	4	.....	4	.....	.....	.....	.....	.....	.....
2259.	1	.....	L	L	60	60	900	900	.....	900	.....	.....	.....	.....	.....	.....
2260.	8	.....	L	O	60	60	35	18	.....	18	.....	.....	.....	.....	.....	.....
2261.	1	.....	L	L	60	60	4	4	.....	4	.....	.....	.....	.....	.....	.....
2262.	.....	1	O	O	59	59	50	20	30	50	14	.....	.....	.....	.....	.....
2263.	2	.....	O	O	60	60	25	11	14	25	1	.....	.....	.....	.....	.....
2264.	1	.....	L	L	60	60	5	5	.....	5	.....	.....	.....	.....	.....	.....
2265.	19	.....	O	O	60	60	800	60	.....	60	.....	.....	.....	.....	.....	.....
2266.	7	.....	O	O	60	60	75	5	.....	5	.....	.....	.....	.....	.....	.....
2267.	3	.....	L	L	60	60	12	12	.....	12	.....	.....	.....	.....	.....	.....
2268.	1	.....	O	O	60	60	100	100	.....	100	.....	.....	.....	.....	.....	.....
2269.	7	.....	O	O	60	60	250	100	.....	100	.....	.....	.....	.....	.....	.....

TOMAH.

1270. | 3 | | O | R | 66 | 60 | 190 | 180 | 1 | 181 | 2 | | | 1 | Y | Y

TOMAHAWK.

2271. | 1 | | O | R | 60 | 60 | 60 | 60 | | 60 | 1 | | | 1 | 2 | Y | Y
2272. | 2 | | L | L | 60 | 60 | 58 | 58 | | 58 | 2 | | | 1 | 1 | .. | ..
2273. | 2 | | L | L | 60 | 60 | 35 | 35 | | 35 | | | | | |
2274. | 3 | | L | L | 60 | 60 | 50 | 14 | | 14 | | | | | |
2275. | 2 | | L | L | 60 | 60 | 20 | 12 | | 12 | 3 | | | | |
2276. | 1 | | L | L | 60 | 60 | 35 | 27 | | 27 | 8 | | | | |
2277. | | | O | O | 60 | 60 | 10 | 7 | | 7 | | | | | |
2278. | 2 | | L | L | 60 | 60 | 50 | 17 | | 17 | | | | | |
2279. | 1 | | O | O | 60 | 60 | 7 | 7 | | 7 | | | | | |
2280. | 2 | | O | O | 144 | 144 | 25 | 25 | | 25 | | | | | | | Y | Y

TOMAHAWK LAKE.

2281. | 7 | | O | R | 60 | 60 | 28 | 28 | | 28 | | | | 2 | 2 | Y | Y

TIGERTON.

2282. | 2 | | O | R | 66 | 66 | 40 | 40 | | 40 | | | | 1 | Y | Y
2283. | 1 | | O | .. | 66 | 66 | 45 | 45 | | 45 | | | | 1 | 1 | .. | ..
2284. | 3 | | O | .. | 66 | 66 | 25 | 25 | | 25 | | | | 3 | .. | ..

DOUGLAS COUNTY—Continued.

Running number	DOORS.		ELEVATORS.			Machinery vats and pan guarded.	CLOSETS.		Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER.		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.		Openings guarded.	Properly provided.						Screened.	Steam.	Water.	Electric, Gas
2249.	.....	N	.....	.....	.....	.....	Y	Y	.....	52	.....	3	2	900	.....	.....
2250.	.....	.....	.....	.....	.....	.....	.....	.....	.....	52	.....	1	1	10	.....	.....
2251.	.....	.....	.....	.....	.....	.....	.....	.....	.....	52	.....	.....	.....	.....	.....	.....
2252.	.....	.....	.....	.....	.....	.....	.....	.....	.....	52	.....	.....	.....	.....	.....	.....
2253.	.....	.....	.....	.....	.....	.....	.....	.....	.....	52	.....	.....	.....	.....	.....	.....
2254.	O	.....	.....	.....	.....	.....	Y	.....	.....	52	.....	4	3	1000	.....	.....
2255.	.....	.....	.....	.....	.....	.....	.....	.....	.....	52	.....	.....	.....	.....	.....	.....
2256.	S	.....	.....	.....	.....	.....	.....	.....	.....	25	.....	.....	.....	.....	.....	.....
2257.	I	.....	.....	.....	.....	.....	.....	.....	.....	52	.....	.....	.....	.....	.....	.....
2258.	.....	.....	1	.....	.....	.....	.....	.....	.....	28	.....	.....	.....	.....	.....	.....
2259.	.....	.....	.....	.....	.....	.....	.....	.....	.....	52	.....	.....	.....	.....	.....	.....
2260.	.....	.....	.....	.....	.....	.....	Y	Y	.....	52	.....	1	1	20	.....	.....
2261.	.....	.....	.....	.....	.....	.....	.....	.....	.....	45	.....	.....	.....	.....	.....	.....
2262.	I	N	1	Y	B	Y	Y	.....	Y	52	.....	1	1	80	.....	.....
2263.	N	.....	.....	.....	.....	.....	.....	.....	.....	45	.....	1	1	.....	.....	4
2264.	.....	.....	1	Y	.....	Y	.....	.....	.....	.....	.....	1	1	35	.....	.....
2265.	.....	.....	.....	.....	.....	.....	.....	.....	.....	25	.....	11	28	2400	.....	40
2266.	N	.....	.....	.....	.....	.....	.....	.....	.....	20	.....	5	2	270	.....	.....
2267.	.....	.....	.....	.....	.....	.....	.....	.....	.....	45	.....	.....	.....	.....	.....	.....
2268.	I	N	.....	.....	.....	.....	Y	.....	.....	30	.....	.....	.....	.....	.....	.....
2269.	.....	.....	.....	.....	.....	.....	.....	.....	.....	50	.....	4	9	440	.....	.....

MONROE COUNTY.

2270.	Y	Y	G	52	1	8	4	475
-------	-------	-------	-------	-------	-------	-------	---	---	-------	---	----	---	---	---	-----	-------	-------

LINCOLN COUNTY.

2271.	O	N	.....	.....	.....	.....	N	Y	.....	G	G	31	.....	7	1	300	.....
2272.	O	.....	.....	.....	.....	.....	Y	Y	.....	G	G	31	.....	4	1	225	.....
2273.	O	.....	.....	.....	.....	.....	.....	.....	.....	G	G	31	.....	3	1	250	.....
2274.	O	.....	.....	.....	.....	.....	.....	.....	.....	G	G	31	.....	1	1	60	.....
2275.	.....	.....	.....	.....	.....	.....	Y	.....	.....	G	G	48	.....	1	1	75	.....
2276.	.....	.....	.....	.....	.....	.....	.....	.....	.....	G	.....	48	.....	.....	.....	.....	.....
2277.	.....	.....	.....	.....	.....	.....	.....	.....	.....	G	.....	31	.....	.....	.....	.....	.....
2278.	.....	.....	.....	.....	.....	.....	.....	.....	.....	G	.....	31	.....	.....	.....	.....	.....
2279.	.....	.....	.....	.....	.....	.....	Y	Y	.....	G	.....	1	1	30	.....	.....
2280.	Y	N	.....	.....	.....	.....	.....	.....	.....	G	.....	50	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G	.....	52	.....	2	.....	.....	.....

VILAS COUNTY.

2281.	N	N	Y	G	28	3	3	200
-------	-------	---	-------	-------	-------	-------	---	---	-------	---	----	-------	---	---	-----	-------	-------

SHAWANO COUNTY.

2282.	O	.....	.....	.....	.....	.....	Y	.....	.....	G	30	.....	2	1	70	.....	.....
2283.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	.....	.....	.....	.....	.....	.....	.....
2284.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	20	.....	2	2	95	.....	.....

MANITOWOC COUNTY.

Running number	DOORS.		ELEVATORS				CLOSETS.		Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER			
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.	Machinery vats and pan guarded.	Properly provided.						Screeded.	Steam.	Water.	Electric, Gas
2285.	I	..	..	..	..	..	Y	Y	Y	G	47	..	1	1	20	..	..
2286.	S	..	..	..	..	..	..	..	..	G	48	..	1	1	40	..	..
2287.	I	..	1	Y	G	Y	..	Y	Y	G	52	..	2	1	250	..	..
2288.	I	..	..	..	..	..	..	..	..	G	52	..	1	1	15	..	..
2289.	..	..	..	..	..	..	..	..	..	G	..	..	1	1	85	..	..
2290.	S	N	..	..	..	..	Y	Y	Y	G	52	..	5	1	300	..	..
2291.	I	..	..	..	..	..	..	..	..	G	52	..	2	1	150	..	..
2292.	I	..	1	Y	D	Y	..	..	Y	G	52	..	4	2	425	..	..

PIERCE COUNTY.

2293.	G	48	..	1	1	35
-------	----	----	----	----	----	----	----	----	----	---	----	----	---	---	----	----	----

CLARK COUNTY.

2294.	O	N	N	G	48	..	2	1	50
-------	---	---	----	----	----	----	---	----	----	---	----	----	---	---	----	----	----

PIERCE COUNTY.

2295.	N	F	8	..	1	1	25
-------	----	----	----	----	----	----	---	----	----	---	---	----	---	---	----	----	----

VERNON COUNTY.

2296.	..	..	..	..	..	..	Y	Y	N	G	52	..	1	1	4	..	..
2297.	..	..	..	..	..	..	..	..	N	G	..	..	1	1	15	..	..

MONROE COUNTY.

2298.	N	Y	Y	G	50	..	1	1	40
-------	----	----	----	----	----	----	---	---	---	---	----	----	---	---	----	----	----

BAYFIELD COUNTY.

2299.	I	N	..	..	..	..	N	Y	..	G	40	1	15	4	1210	..	..
2300.	..	..	..	..	..	..	..	..	..	G	40	..	1	1	120	..	..
2301.	..	..	..	..	..	..	Y	N	..	F	..	..	2	1	100	..	..
2302.	..	..	..	..	..	..	..	Y	..	F	45	1	2	1	700	..	..
2303.	S	N	..	..	..	..	N	..	..	G	32	..	4	3	..	..	..
2304.	O	..	..	..	..	..	N	..	..	G	25	..	10	4	260	..	..
2305.	S	..	..	..	..	..	Y	Y	..	G	50	..	..	..	..	..	..

JEFFERSON COUNTY.

2306.	O	N	..	..	..	..	Y	..	..	G	52	..	1	1	42	..	..
2307.	I	..	..	..	..	..	..	..	..	G	52	..	1	1	35	50	..
2308.	I	..	..	..	..	..	..	..	..	G	52	..	..	..	..	..	..
2309.	..	..	..	..	..	..	Y	..	..	G	52	..	..	..	..	..	..

WATERTOWN.

Running number.	BUILDINGS.		PLANT.		HOURS PER WEEK.		EMPLOYEES.					Number of fire escapes.	STAIRWAYS.				
	1 to 2 stories.	3 or more stories.	Owned or leased.	Running or idle.	When running full time.	Date of inspection.	Full capacity.	Date of Inspection.					Outside.	Inside.	Openings guarded.	Have hand rails.	
								Male	Female.	Total	Between 14 and 18 years.						Under 14 years
2310.	3	.....	O	R	60	60	20	10	.....	10	.....	.....	1	1	.....	.....
2311.	6	.....	O	.....	60	72	20	16	.....	16	.....	.....	1	1	Y	Y
2312.	1	1	O	.....	60	60	50	34	.....	34	.....	.....	1	1	Y	Y
2313.	2	5	O	.....	60	63	30	25	.....	25	.....	.....	6	.....	.....	.....
2314.	3	.....	O	.....	60	60	45	36	.....	36	.....	.....	1	.....	.....	.....
2315.	3	1	O	.....	72	72	7	6	.....	6	.....	.....	.....	1	.....	.....
2316.	6	5	O	.....	60	60	20	12	.....	12	.....	.....	.....	1	Y	Y
2317.	P	6	O	.....	60	60	45	9	.....	9	.....	.....	5	.....	.....	.....
2318.	1	1	O	.....	60	60	5	3	.....	3	.....	.....	1	.....	Y	.....
2319.	2	1	O	.....	72	72	18	11	.....	11	.....	.....	2	.....	.....	.....
2320.	6	2	O	.....	60	60	35	30	.....	30	.....	.....	2	.....	.....	.....
2321.	P	1	O	.....	48	48	9	6	.....	6	.....	.....	.....	.....	Y	Y
2322.	7	.....	O	.....	60	60	45	19	.....	19	.....	.....	.....	2	.....	.....
2323.	4	1	O	.....	60	60	60	60	.....	60	.....	.....	1	Y	Y	.....
2324.	P	1	O	.....	60	54	5	5	.....	5	.....	.....	.....	.....	.....	.....
2325.	P	1	O	.....	60	60	5	2	.....	2	.....	.....	.....	.....	.....	.....
2326.	3	.....	O	.....	60	60	17	11	.....	11	.....	.....	.....	.....	.....	.....
2327.	P	1	O	.....	60	48	7	5	.....	5	.....	.....	.....	1	.....	.....
2328.	2	.....	O	.....	72	72	5	4	.....	4	.....	.....	.....	1	Y	Y
2329.	4	.....	O	.....	60	60	6	5	.....	5	.....	.....	.....	.....	.....	.....
2330.	3	.....	O	.....	59	59	15	7	.....	7	.....	.....	.....	.....	.....	.....
2331.	P	1	O	.....	60	60	5	4	.....	4	.....	.....	.....	.....	.....	.....
2332.	3	.....	O	.....	60	60	100	48	28	76	.....	.....	.....	2	.....	.....
2333.	1	.....	O	.....	60	60	9	2	.....	7	.....	.....	.....	1	Y	.....
2334.	1	.....	L	.....	60	60	11	9	.....	11	.....	.....	.....	1	.....	Y
2335.	.....	P 1	O	.....	54	48	50	45	3	48	.....	.....	.....	1	.....	.....
2336.	2	.....	O	.....	60	60	25	13	.....	14	.....	.....	.....	1	Y	Y
2337.	2	2	O	.....	60	60	75	40	.....	60	.....	.....	.....	.....	.....	.....

WHITEWATER.

2338.	2	1	O	R	60	60	5	5	.....	5	.....	.....	.....	2	.....	.....
2339.	3	1	O	.....	60	60	5	5	.....	5	.....	.....	.....	2	Y	Y
2340.	2	.....	O	.....	60	60	7	2	.....	2	.....	.....	1	.....	.....	.....
2341.	1	.....	O	.....	60	60	5	5	.....	5	.....	.....	.....	.....	.....	.....
2342.	1	.....	O	.....	60	60	10	4	2	6	.....	.....	1	1	.....	.....
2343.	2	.....	L	.....	60	60	5	2	.....	2	.....	.....	.....	.....	.....	.....
2344.	3	.....	O	.....	60	60	10	3	2	5	.....	.....	.....	1	Y	Y

WAUPACA.

2345.	2	1	O	R	60	60	15	8	5	13	2	.....	.....	2	Y	Y
2346.	3	.....	O	.....	60	60	20	9	.....	9	.....	.....	1	2	Y	Y
2347.	3	.....	O	I	60	.....	10	6	.....	6	.....	.....	.....	2	Y	Y
2348.	1	1	O	.....	60	60	5	4	.....	4	.....	.....	1	2	.....	.....
2349.	4	.....	O	.....	60	60	7	3	.....	3	.....	.....	.....	.....	.....	.....
2350.	14	.....	O	I	60	.....	15	9	.....	9	.....	.....	1	3	Y	Y
2351.	4	.....	O	R	120	120	3	3	.....	3	.....	.....	.....	.....	.....	.....
2352.	1	.....	O	.....	60	60	3	2	.....	2	.....	.....	.....	.....	.....	.....
2353.	P	1	O	.....	60	60	6	6	.....	6	.....	.....	.....	1	Y	.....
2354.	P	1	L	.....	60	60	6	3	3	6	.....	.....	1	1	.....	Y
2355.	7	.....	O	.....	60	60	22	22	.....	22	.....	.....	1	2	.....	.....
2356.	.....	.....	O	.....	60	60	6	3	3	6	.....	.....	.....	.....	.....	.....
2357.	.....	.....	L	.....	60	60	5	3	.....	3	.....	.....	.....	.....	Y	Y

JEFFERSON COUNTY.

Running number	DOORS.		ELEVATORS.				Machinery vats and pan guarded.	CLOSETS.		Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER.		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.		Properly provided.	Screened.						Steam.	Water.	Electric, Gas
2310.	I	N					Y			G	52		1	1	30		
2311.	O		1	Y	G	Y		Y		G	36		1	2	75		
2312.	I									G	52		1	1	28		
2313.	I							Y		G	52		1	1	35		
2314.	I									G	26		3	3	66		
2315.	Z	N								G	52		1	1	45	60	
2316.	Z									G	52		1	1	35		
2317.	Z							Y		G	52		1	2	360		
2318.	I									G	52		1	1			
2319.	I									G	52		1	1	125	150	
2320.	I	N						Y		G	52		3	3	160		
2321.	I									G	52						
2322.	I						Y			G	52		1	1	18		
2323.	S		1	Y	B	Y	Y	Y		G	40		2	1	125	90	
2324.	I									G	52						
2325.	I						Y			G	13		1	1	20		
2326.	I									G	26		1	1	15		
2327.	I	N						Y		G	52						
2328.	I						Y			G	52		3	1	210		
2329.	I									F	52		1	1	10		
2330.	S									F	52		1	2	20		
2331.	I							Y		G	52						
2332.	O						Y		Y	G	40		1	1	30		
2333.	I									G	52		2	1	6		
2334.	I									G	52			1	2		
2335.	I		1	Y	G	Y				G	48						
2336.	O									G	52						
2337.	O		2		G	Y	Y			G	42		2	1	32		

WALWORTH COUNTY.

2338.	I						Y			G	52		1	1	40	70	
2339.	I									G	52		1	1	10		
2340.	O									G	16		1	1	40		
2341.	I									G	52		2	2	235		
2342.	I		1	Y	D	Y		Y		G	52		1	1	6		
2343.	I									G	8		1	1	8		
2344.	I							Y		G	52		1	1	10		

WAUPACA COUNTY.

2345.	N	N					Y	Y		G	52					35	
2346.	N									G	34		1	1	50		
2347.	N	N								G	24				65		
2348.	N						Y			G	52				120		
2349.	N									G	40		1	1	6		
2350.	N									G	45					35	
2351.	N									G	52					200	
2352.	N									G	52					100	
2353.	N									G	52		1	1		2½	
2354.	N									G	52						
2355.	S	O								G	8		1	2	80		
2356.	N									G	52		1	1	4		
2357.	N									G	52					36	

WAUPUN.

Running number.	BUILDINGS.		PLANT.		HOURS PER WEEK.		EMPLOYEES.						STAIRWAYS.				
	1 to 2 stories.	3 or more stories.	Owned or leased.	Running or idle.	When running full time.	Date of inspection.	Full capacity.	Date of Inspection.					Number of fire escapes.	Outside.	Inside.	Openings guarded.	Have hand rails.
								Male	Female.	Total.	Between 14 and 18 years.	Under 14 years					
2358.	5	.....	O	R	60	45½	60	41	.....	41	.....	.....	.....	1	1	.....	.....
2359.	5	.....	L	.....	60	72	60	17	48	65	8	.....	.....	.....	4	.....	.....
2360.	1	1	O	.....	60	48	2	2	.....	2	.....	.....	.....	.....	1	Y	Y
2361.	1	.....	L	.....	60	48	13	10	3	13	.....	.....	.....	.....	1	Y	Y
2362.	3	.....	O	.....	60	60	5	3	.....	3	.....	.....	.....	.....	2	.....	.....
2363.	1	.....	O	.....	60	60	31	11	13	24	1	.....	.....	.....	1	.....	.....
2364.	3	.....	O	.....	60	51	20	10	.....	10	.....	.....	1	.....	2	.....	.....
2365.	3	.....	O	.....	60	72	5	5	.....	5	.....	.....	.....	1	Y	Y	.....
2366.	1	.....	O	.....	60	60	40	40	.....	40	3	.....	.....	1	.....	.....	.....
2367.	1	.....	L	.....	60	60	74	1	73	74	.....	.....	.....	3	.....	.....	.....
2368.	4	.....	L	.....	60	60	325	325	.....	325	.....	.....	.....	1	3	.....	.....
2369.	.....	1	O	.....	60	60	50	.....	50	50	2	.....	.....	1	.....	.....	.....
2370.	1	.....	L	.....	60	60	13	13	.....	13	.....	.....	.....	1	.....	.....	.....
2371.	1	.....	L	.....	60	60	5	5	.....	5	1	.....	.....	1	.....	.....	.....

WAUSAU.

2372.	4	.....	O	R	60	60	118	102	.....	102	.....	.....	.....	1	1	Y	Y
2373.	5	.....	L	.....	60	60	48	28	.....	28	.....	.....	.....	.....	.....	.....	.....
2374.	1	.....	O	.....	48	48	5	4	.....	4	1	.....	.....	.....	.....	.....	.....
2375.	1	.....	L	.....	60	60	6	6	.....	6	.....	.....	.....	.....	1	Y	Y
2376.	4	2	O	.....	60	60	250	210	1	211	40	.....	.....	1	2	.....	.....
2377.	1	.....	O	.....	60	60	12	6	.....	6	.....	.....	.....	1	1	.....	.....
2378.	2	.....	O	.....	60	60	12	8	.....	8	.....	.....	.....	.....	.....	.....	.....
2379.	2	.....	O	.....	60	60	146	145	1	146	40	.....	.....	.....	.....	.....	.....
2380.	3	1	O	.....	60	60	10	9	1	10	.....	.....	.....	1	3	Y	Y
2381.	2	1	O	.....	144	144	10	7	1	8	.....	.....	.....	.....	2	.....	.....
2382.	P 1	.....	L	.....	60	60	12	11	1	12	2	1	.....	.....	.....	.....	.....
2383.	1	.....	L	.....	60	60	45	5	.....	5	.....	.....	.....	.....	.....	.....	.....
2384.	.....	2	O	.....	60	60	12	8	1	9	.....	.....	.....	.....	2	Y	Y
2385.	2	.....	O	.....	144	144	21	18	1	19	.....	.....	.....	.....	3	.....	.....
2386.	4	.....	O	.....	120	120	145	145	.....	145	6	.....	.....	.....	1	.....	.....
2387.	1	1	O	.....	60	60	60	34	2	36	.....	.....	.....	.....	1	.....	.....
2388.	4	.....	O	.....	60	60	7	5	.....	5	.....	.....	.....	1	2	.....	.....
2389.	1	.....	O	.....	60	60	5	3	.....	3	.....	.....	.....	.....	1	.....	.....
2390.	2	2	O	.....	60	60	10	10	.....	10	.....	.....	.....	.....	2	.....	.....
2391.	3	.....	O	.....	60	60	10	4	.....	4	.....	.....	.....	.....	1	.....	.....
2392.	5	.....	O	.....	120	120	220	220	.....	220	.....	.....	.....	.....	.....	.....	.....
2393.	9	.....	O	.....	60	60	54	54	.....	54	28	.....	.....	.....	.....	.....	.....
2394.	1	.....	O	.....	60	60	100	96	1	97	25	6	.....	.....	.....	.....	.....
2395.	.....	.....	O	.....	60	60	60	20	.....	20	.....	.....	.....	.....	.....	.....	.....
2396.	1	.....	O	.....	72	72	7	5	.....	5	.....	.....	.....	.....	.....	.....	.....
2397.	3	.....	O	.....	60	75	14	14	.....	14	3	.....	.....	.....	1	Y	Y
2398.	4	.....	O	.....	60	66	75	75	.....	75	21	.....	.....	.....	1	.....	.....
2399.	.....	P 1	L	.....	60	60	5	4	1	5	.....	.....	.....	.....	1	.....	.....
2400.	1	.....	O	.....	60	60	5	5	.....	5	.....	.....	.....	1	1	.....	.....
2401.	3	1	O	.....	60	60	20	19	1	20	.....	.....	.....	.....	1	.....	.....
2402.	3	.....	O	.....	168	168	6	6	.....	6	.....	.....	.....	.....	.....	.....	.....
2403.	3	.....	O	.....	60	60	50	48	.....	48	3	.....	.....	.....	1	Y	Y
2404.	P 1	.....	L	.....	60	60	5	3	1	4	.....	.....	.....	2	.....	.....	.....
2405.	5	.....	O	.....	60	60	50	39	.....	39	.....	.....	.....	.....	11	.....	.....

FOND DU LAC COUNTY.

Running number	DOORS.		ELEVATORS				Machinery vats and pan guarded.	CLOSETS.		Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER.		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.		Properly provided.	Screened.						Steam.	Water.	Electric, Gas.
2358.	..	..	..	..	..	..	Y	Y	F	40	..	..	..	..	..	..
2359.	O	N	..	..	..	..	..	..	G	52	..	1	..	..	2	50
2360.	..	..	..	..	..	..	..	..	F	38	..	..	1	..	15	..
2361.	I	N	..	..	..	..	..	..	F	51	..	..	..	..	70	..
2362.	I	..	..	..	..	..	Y	..	G	52	..	1	..	..	10	..
2363.	Y	..	1	Y	D	Y	..	..	G	49	..	..	1	..	..	5 1/2 g
2364.	..	..	..	..	..	..	..	..	G	52	..	..	..	..	..	..
2365.	I	N	..	..	..	..	..	..	F	48	..	1	..	..	50	..
2366.	O	N	1	Y	B	Y	..	..	F	50	..	..	1	..	30	..
2367.	I	..	1	..	B	..	..	..	F	50	..	1	..	..	10	..
2368.	O	..	1	..	B	..	Y	..	F	50	..	3	3	175	..	..
2369.	O	..	1	N	..	..	Y	..	F	50	..	..	..	..	..	..
2370.	O	..	..	..	..	..	..	..	G	50	..	..	..	..	..	..
2371.	O	N	..	..	..	..	..	..	G	52	..	..	..	..	..	..

MARATHON COUNTY.

2372.	I	N	..	..	..	..	Y	Y	G	33	..	6	3	320	..	..
2373.	S	..	..	..	..	..	..	..	G	9	..	1	2	..	..	..
2374.	..	..	..	..	..	..	..	..	G	45	..	..	..	..	..	..
2375.	I	N	..	..	..	..	Y	Y	G	52	..	..	..	..	4	..
2376.	S	..	2	Y	T	Y	..	..	G	45	..	4	4	325	..	..
2377.	I	..	..	..	..	..	Y	..	G	52	..	..	..	..	4	..
2378.	S	..	..	..	..	..	..	Y	G	51	..	1	1	35	..	..
2379.	I	..	..	..	..	..	..	Y	G	48	..	4	1	275	..	..
2380.	..	..	..	..	..	..	N	..	G	..	..	1	1	25	..	..
2381.	I	..	..	..	..	..	Y	..	F	45	..	1	1	75	..	..
2382.	..	..	..	..	..	..	..	..	F	50	..	..	..	..	..	..
2383.	..	..	..	..	..	..	Y	Y	..	32	..	2	1	60	..	..
2384.	I	N	..	..	..	..	..	Y	F	52	..	1	3	40	..	..
2385.	S	..	1	Y	B	Y	..	..	G	45	..	..	..	..	..	..
2386.	..	..	..	..	..	..	..	..	G	32	..	5	2	350	..	..
2387.	O	N	..	..	..	..	..	..	G	50	..	1	1	75	..	..
2388.	I	..	..	..	..	..	..	..	G	52	..	1	1	20	..	..
2389.	S	..	..	..	..	..	..	..	G	52	..	..	..	..	..	..
2390.	I	..	..	..	..	..	..	Y	G	52	..	2	2	115	..	..
2391.	I	..	..	..	..	..	N	..	G	..	..	1	1	10	..	..
2392.	..	..	..	..	..	..	Y	..	G	32	..	4	1	550	..	..
2393.	S	..	..	..	..	..	..	Y	G	44	..	2	1	150	..	..
2394.	S	..	..	..	..	..	..	..	G	45	..	2	1	250	..	..
2395.	..	..	..	..	..	..	..	..	G	28	..	..	..	..	..	..
2396.	I	N	..	..	..	..	N	Y	G	52	..	3	4	360	..	..
2397.	S	..	..	..	..	..	..	..	G	40	..	1	1	125	..	..
2398.	S	..	1	Y	G	Y	Y	..	G	51	..	1	1	150	..	..
2399.	I	..	..	..	..	..	..	..	G	52	..	..	..	..	..	..
2400.	I	..	..	..	..	..	..	..	G	52	..	..	..	..	3	2 1/2
2401.	S	..	1	Y	..	Y	N	..	G	52	..	..	..	..	125	..
2402.	I	..	..	..	..	..	Y	..	G	52	..	2	2	200	..	..
2403.	..	..	1	Y	T	Y	..	..	G	..	..	1	1	75	..	..
2404.	I	N	..	..	..	..	..	Y	G	52	..	..	..	..	..	..
2405.	I	..	..	..	..	..	N	..	G	20	..	4	2	225	..	..

MARINETTE COUNTY.

Running number	DOORS.		ELEVATORS.				Machinery vats and pan guarded.	CLOSETS.		Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER.		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.		Properly provided.	Screened.						Steam.	Water.	Electric, Gas
2406.	N	.....	.....	.....	.....	Y	.....	.....	.....	39	N	4	3	.....	.....	.....

PIERCE COUNTY.

2407.	S	N	G	50	N	1	1	70
-------	---	---	-------	-------	-------	-------	-------	-------	-------	---	----	---	---	---	----	-------	-------

MARATHON COUNTY.

2408.	O	N	Y	8	N	1	1	25
-------	---	---	-------	-------	-------	-------	---	-------	-------	-------	---	---	---	---	----	-------	-------

WASHINGTON COUNTY.

2409.	I	N	.....	.....	.....	.....	Y	Y	.....	G	52	N	1	1	5	.....	.....
2410.	O	..	.....	.....	.....	.....	..	..	.....	G.G.	48	..	1	1	30	.....	.....
2411.	I	..	.....	.....	.....	.....	..	..	.....	G.G.	52	..	1	1	50	.....	.....
2412.	I	..	.....	.....	.....	.....	..	..	.....	G.G.	52	..	1	1	60	108	.....
2413.	I	..	.....	.....	.....	.....	..	..	.....	G	52	..	..	2	.....	.....	.....
2414.	I	..	.....	.....	.....	.....	..	Y	.....	G	52	..	4	4	150	.....	.....
2415.	I	..	.....	.....	.....	.....	..	..	.....	F	52	..	..	1	6	.....	.....

VERNON COUNTY.

2416.	I	N	Y	Y	Y	20	1	1	25
-------	---	---	-------	-------	-------	-------	---	---	---	-------	----	-------	---	---	----	-------	-------

BROWN COUNTY.

2417.	.....	.....	.....	.....	.....	.....	Y	.....	.....	.....	12	.....	1	1	36	.....	.....
2418.	.....	.....	.....	.....	.....	.....	..	..	.....	.....	21	.....	..	..	..	.....	.....
2419.	.....	.....	.....	.....	.....	.....	Y	.....	.....	.....	21	.....	1	1	30	.....	.....
2420.	.....	.....	.....	.....	.....	.....	..	..	.....	.....	21	.....	1	1	40	.....	.....
2421.	.....	.....	.....	.....	.....	.....	..	..	.....	.....	21	.....	..	..	..	.....	.....

WAUPACA COUNTY.

2422.	O	N	.....	.....	.....	.....	Y	Y	Y	G	30	.....	1	.....	.....	40	.....
2423.	S	..	.....	.....	.....	.....	N	..	.....	F	10	.....	.....	.....	.....	150	.....
2424.	O	..	.....	.....	.....	.....	Y	..	.....	G	52	.....	.....	.....	.....	1000	.....
2425.	O	..	.....	.....	.....	.....	..	..	.....	G	52	.....	.....	.....	.....	80	.....

SHAWANO COUNTY.

2426.	I	.....	.....	.....	.....	.....	Y	.....	.....	.....	4	.....	1	1	40	.....	.....
2427.	O	N	.....	.....	.....	.....	..	.....	.....	G	26	.....	3	1	85	.....	.....

PORTAGE COUNTY.

2428.	O	N	1	Y	.....	Y	Y	Y	Y	G	52	.....	4	2	400	2700	.....
2429.	O	..	2	Y	G	..	..	..	..	G	52	.....	2	.....	.....	1500	.....

WILDWOOD.

Running number.	BUILDINGS.		PLANT.		HOURS PER WEEK.		EMPLOYEES					STAIRWAYS.					
	1 to 2 stories.	3 or more stories.	Owned or leased.	Running or idle.	When running full time.	Date of inspection.	Full capacity.	Date of Inspection.				Number of fire escapes.	Outside.	Inside.	Openings guarded.	Have hand rails.	
								Male.	Female.	Total.	Between 14 and 18 years.						Under 14 years.
2430.	1	1	O	R	60	60	40	40	.....	40	.....	.....	.....	1	2	Y	Y

WITTENBURG.

2431.	1	1	O	R	60	60	5	2	.....	2	.....	.....	.....	.....	1	Y	Y
2432.	2	.....	O	.....	66	18	20	18	.....	18	.....	.....	.....	.....	1	.....	.....
2433.	2	.....	O	I	60	.....	23	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
2434.	5	.....	O	.....	60	.....	35	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
2435.	3	1	O	R	60	60	40	32	.....	32	.....	2	.....	.....	1	Y	Y

WOODBORO.

2436.	7	O	I	60	60	2	2	2	Y	Y
-------	---	-------	---	---	----	-------	----	---	-------	---	-------	-------	-------	-------	---	---	---

WAUKESHA.

2437.	9	2	O	R	60	60	10	10	.....	10	2	2	.....	1	1	Y	Y
2438.	2	.....	O	.....	60	60	6	6	.....	6	.....	.....	.....	.....	1	.....	.....
2439.	2	.....	O	.....	60	60	25	10	.....	10	.....	.....	.....	.....	1	.....	.....
2440.	2	1	O	.....	60	60	9	9	.....	9	.....	.....	.....	.....	1	.....	.....
2441.	1	.....	O	.....	60	48	5	2	.....	2	.....	.....	.....	.....	1	.....	.....
2442.	1	.....	O	.....	60	60	15	8	.....	8	3	.....	.....	.....	1	.....	.....
2443.	2	1	O	.....	60	60	25	25	.....	25	.....	.....	.....	.....	3	.....	.....
2444.	5	.....	I	.....	60	60	5	4	.....	4	.....	.....	.....	.....	1	.....	.....
2445.	6	.....	O	.....	60	60	20	9	.....	9	.....	.....	.....	.....	1	.....	.....
2446.	P 1	.....	I	.....	60	60	20	2	7	9	.....	.....	.....	.....	1	.....	.....
2447.	2	.....	O	.....	60	60	8	4	.....	4	.....	.....	.....	.....	1	.....	.....
2448.	2	.....	O	.....	60	60	15	13	2	15	3	.....	.....	.....	1	Y	Y
2449.	P 1	.....	O	.....	60	60	8	8	.....	8	.....	.....	.....	.....	1	.....	.....
2450.	1	.....	O	.....	54	54	8	7	1	8	.....	.....	.....	.....	1	.....	.....
2451.	2	.....	O	.....	60	60	5	5	.....	5	.....	.....	.....	.....	1	.....	.....
2452.	1	.....	O	.....	60	60	.....	6	2	8	.....	.....	.....	.....	1	Y	Y
2453.	4	.....	O	.....	60	60	10	10	.....	10	.....	.....	.....	.....	1	.....	.....
2454.	3	.....	O	.....	60	60	10	1	.....	1	.....	.....	.....	.....	1	Y	Y
2455.	3	.....	O	.....	60	60	128	115	.....	115	8	1	.....	1	1	Y	Y
2456.	2	.....	O	.....	60	60	12	8	.....	8	.....	.....	.....	.....	1	.....	Y
2457.	4	.....	O	.....	60	60	45	20	.....	20	4	.....	.....	1	.....	.....	.....
2458.	P 1	.....	O	.....	60	60	10	4	2	6	2	.....	.....	.....	1	.....	.....
2459.	2	.....	O	.....	60	60	25	17	.....	17	2	.....	.....	.....	1	Y	Y
2460.	1	.....	O	.....	60	60	3	3	.....	3	.....	.....	.....	.....	1	.....	.....
2461.	8	.....	O	.....	48	48	148	148	.....	148	2	.....	.....	.....	2	Y	Y

WAUZKA.

2462.	3	.....	O	R	60	60	6	6	.....	6	.....	.....	.....	.....	1	Y	Y
2463.	2	.....	O	I	60	.....	6	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
2464.	1	.....	O	R	60	60	2	2	.....	2	1	.....	.....	.....	1	Y	Y

PIERCE COUNTY.

Running number	DOORS.		ELEVATORS				Machinery vats and pans guarded.	CLOSETS.		Sanitary condition.	Weeks in operation, 1896.	Number of accidents.	Number of boilers.	Number of engines.	HORSE-POWER.		
	Swing in or out.	Locked during office hours.	Number.	Condition of cables good.	Kind of doors.	Openings guarded.		Properly provided.	Screened.						Steam.	Water.	Electric, Gas.
2430.	S	N	.....	.....	.....	.....	N	.....	.....	F	32	.....	4	1	150	.....	.....

SHAWANO COUNTY.

2431.	I	N	.....	.....	.....	.....	Y	.....	.....	G	52	.....	1	1	25	.....	.....
2432.	.....	.....	.....	.....	.....	.....	.....	.....	.....	G	20	.....	.....	.....	70	.....	.....
2433.	O	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	.....	1	113	.....	.....
2434.	.....	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	.....	1	125	.....	.....
2435.	S	N	1	Y	B	Y	N	.....	.....	G	30	.....	1	1	150	.....	.....

ONEIDA COUNTY.

2436.	O	N	G	34	7	4	175
-------	---	---	-------	-------	-------	-------	-------	-------	-------	---	----	-------	---	---	-----	-------	-------

WAUKESHA COUNTY.

2437.	I	N	.....	.....	.....	.....	Y	.....	.....	G	52	.....	1	1	20	.....	.....
2438.	I	.....	.....	.....	.....	.....	N	.....	.....	G	52	.....	1	1	4	.....	.....
2439.	I	.....	1	Y	B	Y	Y	.....	.....	G	52	.....	1	1	6	.....	.....
2440.	I	.....	.....	.....	.....	.....	.....	.....	.....	F	52	.....	1	1	20	.....	.....
2441.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	1	1	40	.....	.....
2442.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	1	1	.....	.....	.....
2443.	I	.....	1	Y	S	Y	Y	.....	.....	G	52	.....	2	2	35	.....	.....
2444.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	1	1	.....	.....	.....
2445.	I	.....	.....	.....	.....	.....	Y	.....	.....	G	52	.....	1	2	78	.....	.....
2446.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	1	1	8	.....	.....
2447.	I	.....	.....	.....	.....	.....	.....	.....	.....	F	52	.....	2	1	85	.....	.....
2448.	I	.....	1	Y	B	Y	.....	Y	Y	G	52	.....	1	1	20	.....	.....
2449.	O	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	.....	.....	2	.....	1 G
2450.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	.....	.....	4	.....	.....
2451.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	2	2	210	.....	.....
2452.	I	.....	1	Y	D	Y	.....	Y	.....	G	52	.....	1	.....	4	.....	1 G
2453.	.....	.....	.....	.....	.....	.....	.....	.....	.....	G	.....	.....	.....	1	35	.....	.....
2454.	I	N	.....	.....	.....	.....	.....	.....	.....	G	.....	.....	1	1	5	.....	.....
2455.	I	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	1	1	150	.....	.....
2456.	S	.....	.....	.....	.....	.....	.....	.....	.....	G	44	.....	1	1	20	.....	.....
2457.	I	.....	1	Y	B	Y	.....	.....	.....	G	52	.....	1	1	12	.....	.....
2458.	.....	.....	.....	.....	.....	.....	.....	Y	Y	G	52	.....	1	1	18	.....	.....
2459.	I	N	1	Y	G	Y	.....	.....	.....	G	20	.....	1	1	12	.....	.....
2460.	.....	.....	.....	.....	.....	.....	.....	.....	.....	G	52	.....	1	1	112	.....	.....
2461.	S	N	.....	.....	.....	.....	.....	Y	.....	G	52	.....	2	2	270	.....	.....

CRAWFORD COUNTY.

2462.	S	N	.....	.....	.....	.....	Y	Y	.....	G	30	.....	1	1	50	.....	.....
2463.	.....	.....	.....	.....	.....	.....	.....	.....	.....	G	13	.....	1	1	25	.....	.....
2464.	I	N	.....	.....	.....	.....	.....	.....	.....	G	52	.....	1	1	35	.....	.....

TABLE II.—CLASSIFICATION

TOWN, CITY AND COUNTY.	No. of establishments.		BUILDINGS.		PLANT.				HOURS PER WEEK.		No. of engines.	No. of boilers.
			1 to 2 story.	3 or more stories.	Owned.	Leased.	Running.	Idle.	Average when running full time.	Average date of inspection.		
1 Albany, Green Co.....	4	10	...	4	...	4	...	60	60	12	12	
2 Algoma, Kewaunee Co.....	6	18	2	1	1	6	...	60	60	6	6	
3 Alma, Buffalo Co.....	4	5	1	3	5	1	...	63	63	3	3	
4 Amery, Polk Co.....	4	15	1	4	3	3	1	57	56	2	2	
5 Antigo, Langlade Co.....	4	20	1	18	...	18	...	60	60	21	27	
6 Arcadia, Trempealeau Co.....	4	4	1	3	3	1	4	63	63	1	1	
7 Ahland, Ashland Co.....	26	83	5	23	3	26	...	72	72	43	64	
8 Appleton, Outagamie Co.....	48	139	29	37	11	47	1	81	77	34	65	
9 Baraboo, Sauk Co.....	7	10	...	5	2	7	...	59	55	4	4	
10 Barron, Barron Co.....	4	15	...	4	...	4	...	60	60	13	4	
11 Bayfield, Bayfield Co.....	4	11	...	3	1	4	...	62	62	2	2	
12 Beaver Dam, Dodge Co.....	6	16	5	5	1	6	...	60	60	6	10	
13 Beloit, Rock Co.....	34	109	14	27	7	32	2	67	62	31	35	
14 Berlin, Green Lake Co.....	19	19	...	14	5	19	...	65	58	8	8	
15 Birnamwood, Shawano Co.....	4	9	...	4	...	1	3	60	60	4	8	
16 Boscobel, Grant Co.....	10	25	1	9	1	8	2	60	60	7	6	
17 Brillion, Calumet Co.....	6	14	2	6	...	5	1	60	60	6	6	
18 Brodhead, Green Co.....	9	16	1	6	...	9	...	60	60	3	2	
19 Burlington, Racine Co.....	13	31	...	10	3	12	...	60	60	11	12	
20 Cedarburg, Ozaukee Co.....	9	13	5	9	...	8	1	61	61	7	8	
21 Chilton, Calumet Co.....	6	14	1	6	...	6	...	60	60	5	5	
22 Chippewa Falls, Chippewa Co....	6	25	5	6	...	5	1	73	73	8	10	
23 Clintonville, Waupaca Co.....	9	17	2	9	...	8	1	60	57	8	8	
24 Darlington, Lafayette Co.....	6	7	...	5	1	6	...	60	60	4	9	
25 Delavan, Walworth Co.....	7	12	...	6	1	7	...	60	60	5	5	
26 De Pere, Brown Co.....	5	17	7	5	...	5	...	60	59	4	6	
27 Eau Claire, Eau Claire Co.....	39	140	8	33	6	37	2	63	63	36	76	
28 Edgar, Marathon Co.....	4	5	...	4	...	3	1	63	63	4	10	
29 Edgerton, Rock Co.....	4	5	1	3	1	3	1	60	60	3	2	
30 Elkhorn, Walworth Co.....	7	12	2	7	...	7	...	60	60	6	5	
31 Fond du Lac, Fond du Lac Co....	35	63	16	24	11	33	2	63	63	33	34	
32 Fort Atkinson, Jefferson Co.....	9	41	6	7	2	9	...	59	60	12	12	
33 Fountain City, Buffalo Co.....	6	10	2	6	...	6	...	62	62	5	4	
34 Green Bay, Brown Co.....	60	157	16	52	8	54	6	64	64	59	78	
35 Hartford, Washington Co.....	8	30	6	7	1	7	1	60	58	8	9	
36 Hortonville, Outagamie Co.....	4	9	4	4	...	3	1	60	60	4	4	
37 Hudson, St. Croix Co.....	6	20	...	5	1	5	1	61	60	5	13	
38 Independence, Buffalo Co.....	4	6	1	4	...	4	...	60	60	...	...
39 Janesville, Rock Co.....	33	58	14	17	16	32	1	59	59	22	24	
40 Jefferson, Jefferson Co.....	22	60	10	17	5	22	...	60	60	19	23	
41 Kaukauna, Outagamie Co.....	16	68	1	13	3	15	1	88	83	14	23	
42 Kenosha, Kenosha Co.....	20	78	17	13	7	20	...	59	59	37	41	
43 Kewaunee, Kewaunee Co.....	10	24	2	8	2	9	1	64	64	8	8	
44 Lake Mills, Jefferson Co.....	4	12	2	3	1	4	...	60	60	3	4	
45 La Crosse, La Crosse Co.....	76	204	45	50	26	72	4	66	66	93	123	

FACTORY INSPECTION.

345

BY CITIES AND TOWNS.

Running number.	HORSE POWER.			EMPLOYEES.						IMPROVEMENTS.		Wages paid in 1896.
	Steam.	Water.	Electricity.	Full capacity.	Date of Inspection.					On buildings.	On machinery.	
					Male.	Female.	Total.	Between 14-18 years.	Under 14 years.			
1.....	240	170	...	87	22	13	35	.....	.....	.....	.....	\$2,640
2.....	368	.....	.....	158	92	5	97	13	.....	\$1,000	.....	29,216.
3.....	185	.....	2	21	21	.....	21	.....	.....	.....	.....	8,281
4.....	295	80	.....	134	28	.....	28	2	.....	.....	\$800	22,760
5.....	1,561	.....	.....	416	389	4	393	29	.....	1,650	2,000	117,156
6.....	60	.....	.....	13	12	.....	12	1	1	.....	.....	2,876
7.....	4,698	.....	.....	1,045	909	17	926	11	.....	1,298	250	338,010
8.....	4,637	.....	.....	1,705	992	314	1,306	69	1	39,400	46,500	435,023
9.....	162	18	2	325	194	62	256	10	.....	325	150	43,128
10.....	175	160	.....	89	39	9	48	3	.....	350	600	18,800
11.....	40	1	.....	114	106	.....	106	1	1	500	.....	43,740
12.....	600	385	.....	579	358	170	528	74	.....	575	957	99,298
13.....	2,225	695	17	1,652	1,126	247	1,373	89	.....	3,450	2,000	422,169.
14.....	412	.....	.....	608	143	112	255	23	.....	.....	.....	75,787
15.....	205	.....	.....	101	16	.....	16	2	.....	2,000	.....	19,407
16.....	185	.....	2	125	64	.....	64	1	.....	.....	500	23,950
17.....	265	.....	.....	84	48	.....	48	2	.....	1,500	2,500	14,078
18.....	15	100	.....	69	38	6	44	.....	.....	.....	800	14,443
19.....	184	.....	.....	240	102	85	187	34	.....	.....	800	55,887
20.....	236	230	.....	307	159	84	243	34	4	.....	.....	69,536
21.....	191	42	.....	51	39	.....	39	.....	.....	4,000	8,000	17,248
22.....	560	2,155	.....	515	196	.....	196	5	.....	.....	6,200	112,357
23.....	303	146	.....	102	71	3	74	8	.....	17,000	35,000	24,899
24.....	29	150	.....	21	18	.....	18	2	.....	.....	.....	4,046
25.....	177	85	.....	44	26	8	34	1	.....	3,000	8,500	9,850
26.....	1,165	1,025	.....	362	167	153	320	.....	.....	.....	.....	115,796
27.....	5,140	1,790	27	2,147	1,795	60	1,855	103	1	24,516	49,733	535,903
28.....	225	.....	.....	145	110	.....	110	8	.....	.....	.....	20,486
29.....	87	.....	.....	61	23	1	29	2	.....	.....	.....	6,568
30.....	92	.....	.....	59	34	3	37	.....	.....	1,000	3,500	11,687
31.....	2,142	.....	70	1,318	1,031	97	1,128	64	.....	19,396	16,881	341,830
32.....	404	.....	.....	396	347	19	366	47	.....	5,000	.....	84,600
33.....	107	.....	15	27	25	.....	25	1	.....	.....	200	10,707
34.....	4,638	.....	.....	1,735	1,325	85	1,410	75	.....	143,600	90,000	474,673
35.....	385	75	2	97	77	15	92	8	.....	.....	5,500	29,380
36.....	179	.....	.....	50	34	.....	34	.....	.....	1,000	1,300	5,290
37.....	632	.....	.....	413	351	2	353	10	.....	1,600	1,200	106,982
38.....	.....	40	.....	9	7	1	8	.....	.....	.....	.....	4,060
39.....	1,301	.....	62	1,393	685	477	1,162	23	.....	60,000	7,800	363,791
40.....	814	790	1	482	313	34	347	18	.....	.....	.....	140,723
41.....	1,107	4,305	.....	634	513	47	560	13	.....	1,200	.....	268,065
42.....	2,686	.....	1	2,512	1,876	298	2,174	133	.....	2,600	10,350	914,861
43.....	331	.....	.....	197	96	48	144	.....	.....	2,500	12,750	26,057
44.....	183	12	.....	79	41	.....	41	.....	.....	.....	.....	28,550
45.....	7,781	.....	92	3,895	2,390	558	2,948	187	.....	.....	.....	1,094,029

TABLE II.—CLASSIFICATION

TOWN, CITY AND COUNTY.	BUILDINGS.			PLANT.				HOURS PER WEEK.		No. of engines.	No. of boilers.
	No. of establishments.	No. of stories.		Owned.	Leased.	Running.	Idle.	Average when running full time.	Average date of inspection.		
		1 to 2 story.	3 or more stories.								
46 Madison, Dane Co.....	42	92	25	26	16	40	2	61	61	27	31
47 Manitowoc, Manitowoc Co.....	30	34	8	27	3	29	1	68	66	32	35
48 Marathon, Marathon Co.....	7	14	...	7	...	62	...	62	62	7	11
49 Marinette, Oconto Co.....	25	30	12	20	5	25	...	70	70	34	82
50 Marion, Shawano Co.....	6	8	...	6	...	5	1	60	60	5	5
51 Marshfield, Wood Co.....	18	70	4	17	1	18	...	68	68	19	32
52 Mattoon, Shawano Co.....	5	16	...	5	...	5	...	65	65	3	5
53 Mayville, Dodge Co.....	4	8	3	4	...	62	...	62	62	4	10
54 Medford, Taylor Co.....	6	15	...	4	2	6	...	60	60	9	10
55 Mazomanie, Dane Co.....	4	10	1	4	...	2	2	60	60	4	4
56 Menasha, Winnebago Co.....	18	54	17	16	2	14	4	84	83	22	30
57 Menomonee, Dunn Co.....	11	57	1	8	3	10	1	60	59	13	11
58 Merrill, Lincoln Co.....	12	37	2	10	2	10	2	60	60	22	48
59 Milwaukee, Milwaukee Co.....	636	994	535	365	271	627	9	59	59	666	849
60 Mineral Point, Iowa Co.....	9	28	5	7	2	2	1	61	61	8	13
61 Monroe, Green Co.....	15	24	2	6	9	14	1	60	60	10	12
62 Neenah, Winnebago Co.....	15	33	9	11	4	15	...	95	95	18	21
63 Neillsville, Clark Co.....	7	27	2	7	...	6	1	60	60	8	8
64 New London, Waupaca Co.....	16	48	3	13	3	15	1	64	64	17	19
65 Oconto, Oconto Co.....	14	41	3	12	2	11	3	62	60	18	30
66 Oshkosh, Winnebago Co.....	75	150	28	54	21	68	7	61	58	94	120
67 Phillips, Price Co.....	4	18	1	3	1	4	...	81	81	5	23
68 Platteville, Grant Co.....	15	40	2	11	4	13	2	61	60	11	10
69 Plymouth, Pierce Co.....	11	26	10	10	1	8	3	60	60	11	11
70 Portage, Columbia Co.....	13	26	2	6	7	13	...	60	59	11	7
71 Port Washington, Ozaukee Co....	12	36	6	11	1	11	1	61	60	1	2
72 Prairie du Chien, Crawford Co....	13	26	3	11	2	12	1	61	55	13	12
73 Racine, Racine Co.....	75	240	74	51	24	72	3	72	72	139	102
74 Reedsburg, Sauk Co.....	10	30	2	9	1	10	...	63	68	8	9
75 Reedsville, Manitowoc Co.....	4	12	...	4	...	3	1	62	62	4	4
76 Rhinelander, Oneida Co.....	19	62	2	14	5	14	5	60	60	20	41
77 Rib Lake, Taylor Co.....	4	24	...	4	...	4	...	62	62	1	8
78 Rice Lake, Barron Co.....	5	21	...	5	...	4	1	61	61	6	15
79 Richland Center, Richland Co....	10	27	2	8	2	8	2	60	60	8	8
80 Ripon, Fond du Lac Co.....	12	17	3	11	1	11	1	61	61	12	10
81 Seymour, Outagamie Co.....	5	15	1	5	...	5	...	60	60	4	5
82 Shawano, Shawano Co.....	6	16	2	6	...	5	1	75	72	3	6
83 Sheboygan, Sheboygan Co.....	55	119	55	50	5	53	2	61	60	53	73
84 Stanley, Chippewa Co.....	4	21	...	3	1	4	...	60	60	20	7
85 St. Croix Falls, Polk Co.....	5	9	...	4	1	3	2	60	60	3	3
86 Stevens Point, Portage Co.....	14	49	2	14	...	14	...	60	60	16	19
87 Stoughton, Dane Co.....	4	19	1	2	2	4	...	60	60	3	3
88 Soldiers Grove, Crawford Co....	4	7	...	4	...	3	1	61	60	1	1
89 Sturgeon Bay, Door Co.....	11	30	...	10	1	10	1	64	58	12	17
90 Superior, Douglas Co.....	106	239	25	60	46	103	3	64	64	160	127
91 Tomahawk, Lincoln Co.....	10	16	...	5	5	10	...	62	62	6	19
92 Two Rivers, Manitowoc Co.....	8	43	7	7	1	7	1	60	60	9	17
93 Washburn, Bayfield Co.....	7	32	1	7	...	6	1	60	60	14	34
94 Waterloo, Jefferson Co.....	4	7	1	4	...	3	1	60	58	2	2
95 Watertown, Jefferson Co.....	28	72	19	24	4	28	...	60	60	32	35

FACTORY INSPECTION.

347

BY CITIES AND TOWNS.—Continued.

Running number.	HORSE POWER.			EMPLOYEES.						IMPROVEMENTS.		Wages paid in 1886.
	Steam.	Water.	Electricity.	Full capacity.	Date of Inspection.					On building.	On machinery.	
					Male	Female.	Total.	Between 14-18 years	Under 14 years.			
46	1,911		150	1,332	982	108	1,090	19		\$2,300	\$6,402	\$25,000
47	1,567			978	651	67	718	44		39,500	4,350	247,846
48	390			140	94		94	1		1,500	3,000	17,398
49	4,422	560	13	2,021	1,502	43	1,545	39				470,043
50	155	75		57	41		41			800		5,461
51	1,485			627	592	6	598	71		4,100		153,496
52	250			378	353		353	18		1,200	8,300	33,582
53	936			144	116	5	121	3		700	985	43,252
54	420			225	193	2	195	6			50	86,050
55	152	75		36	7		7	1				3,299
56	3,148	1,655		1,448	1,209	115	1,324	195		1,000	2,000	408,715
57	1,720	1,501		785	750	11	761	27		300	2,000	396,622
58	3,057	800	3	1,256	1,027	5	1,032	76	6	2,300	1,771	311,707
59	55,609		670	49,364	29,880	5,993	35,873	6,490	12	712,477	265,470	15,065,763
60	863	30		222	137	24	161	8		1,000	35,000	42,343
61	395	104		148	113	4	117	4				35,246
62	1,563	2,248		465	337	99	436	24		2,000		370,257
63	628			173	64		64	18				14,960
64	861		2	389	276	3	279	34		20,000	27,000	62,438
65	2,083		95	545	185	4	189			4,000	500	105,841
66	8,250			4,852	3,261	484	3,745	450	5	180,303	74,815	1,114,860
67	600	2	3	415	253		253	15			4,300	111,400
68	326		8	185	107	38	145	19				40,989
69	462			256	108	6	114	9				64,644
70	226		17	330	131	149	280	20	1			83,000
71	90			685	569	49	618	57		9,300	9,000	183,184
72	470			245	96	27	123	13		10,700	1,800	26,932
73	7,303		68	7,326	4,558	723	5,281	306		50,953	64,094	1,696,529
74	351	93	7	230	111	49	160	5		520	6,920	44,806
75	160			77	56		56	4		900		3,648
76	1,467	10		781	281	5	286	23		1,300	6,700	154,789
77	600			307	254		254	4				96,141
78	785	500		416	289		289	8	1	450	200	67,326
79	626	225		121	75	5	80	3		2,500		15,544
80	338		16	254	86	92	178	13	6	1,500	2,500	62,526
81	155		2	46	33		33	3				6,240
82	95	300		93	38	2	40			15,000	7,000	12,888
83	4,262		123	5,223	3,974	252	4,226	304		9,600	12,300	1,086,017
84	825			462	462		462	25	1			128,594
85	115	22		54	8		8	7	1	3,000		11,580
86	1,090			482	337	58	395	12		1,000	400	172,537
87	233			201	157	4	161				1,500	48,708
88	50	40		63	26		26	1				10,600
89	705			298	213	28	241	39		7,600	36,200	46,818
90	14,642	40	99	7,332	4,787	147	4,934	95	12	133,800	56,950	1,657,394
91	940			350	262		262	14				88,220
92	1,285			860	630	10	640	101		500		191,400
93	1,390			731	460		460	10			225	175,845
94	77	50		37	22	2	24					10,854
95	1,754	300		744	477	59	536	61				163,294

TABLE II.—CLASSIFICATION

TOWN, CITY AND COUNTY.	No. of establishm nts.		BUIL- INGS.				PLANT.				HOURS PER WEEK.		No. of engines.	No. of boilers.
	1 to 2 story.	3 or more stories.	Owned.	Leased.	Running.	Idle.	Average when run- ning full time.	Average date of in- spection.						
96 Whitewater, Walworth Co.....	7	14	2	6	1	7	...	60	60	8	8			
97 Waupaca, Waupaca Co.....	13	41	2	10	1	11	2	64	64	6	5			
98 Waupun, Fond du Lac Co.....	14	30	2	9	5	14	...	60	58	9	10			
99 Wausau, Marathon Co.....	34	83	9	28	6	34	...	71	71	38	51			
100 West Bend, Washington Co.....	7	19	7	5	2	7	...	68	68	10	8			
101 West De Pere, Brown Co.....	5	16	...	5	...	4	1	64	62	3	3			
102 Weyauwega, Waupaca Co.....	4	11	4	4	...	3	1	66	66	...	1			
103 Wittenberg, Shawano Co.....	13	13	2	5	...	3	2	61	46	4	6			
104 Waukesha, Waukesha Co.....	25	68	4	23	2	25	...	59	59	24	27			
105 Other Places.....	255	833	90	243	8	181	69	61	59	312	683			
Totals	2463	6043	1186	1843	620	2281	182	61.9	59.8	2661	3636			

FACTORY INSPECTION.

349

BY CITIES AND TOWNS.—Continued.

Running number.	HORSE POWER.			EMPLOYEES.						IMPROVEMENTS.		Wages paid in 1896.
	Steam.	Water.	Electricity.	Full capacity.	Date of Inspection.			Between 14 and 18 years.	Under 14 years.	On building.	On machinery.	
					Male.	Female.	Total.					
96.....	339	70	.....	47	26	4	30	.....	.....	.....	.....	9,908
97.....	140	613	.....	123	81	11	92	2	.....	600	.....	27,575
98.....	332	80	.....	703	483	187	670	15	.....	2,600	9,611	83,953
99.....	3,910	136	5	1,515	1,376	13	1,389	169	7	16,618	9,550	450,610
100.....	303	108	.....	125	115	.....	115	6	.....	400	.....	40,837
101.....	106	.....	.....	71	35	.....	35	10	3	.....	.....	9,852
102.....	.....	1,270	.....	59	36	.....	36	.....	.....	.....	.....	8,650
103.....	413	70	.....	123	52	.....	52	2	.....	.....	12,000	6,500
104.....	1,166	4	.....	575	454	14	468	26	3	3,250	33,000	173,178
105.....	65,381	8,760	301	14,591	11,497	185	9,875	166	13	107,577	94,604	2,898,728
Totals	230,786	32,195	1877	133,737	91,233	11322	102,560	9,041	79	\$1695608	1115768	\$35670640

TABLE III — CLASSIFICATION

TOWN, CITY AND COUNTY.	No. establishments.		BUILDINGS.		PLANT.				HOURS PER WEEK		No. of engines.	No. of boilers.
			1 to 2 story.	3 or more stories.	Owned.	Leased.	Running.	Idle.	Average when running full time.	Average date of inspection.		
1 Agricultural Implements.....	37	152	35	34	3	36	1	59	57	41	46	
2 Beef and Pork Packing.....	12	38	18	12	...	12	...	60	52	22	39	
3 Beer and Malt.....	108	391	180	102	6	107	1	62	61	167	211	
4 Bicycles.....	26	56	18	6	20	26	...	60	59	24	25	
5 Boiler Works.....	18	28	4	15	3	16	2	59	50	15	15	
6 Boots and Shoes.....	28	37	19	14	14	28	...	59	57	33	50	
7 Boxes, "Packing".....	20	52	1	18	2	17	3	56	53	18	26	
8 Boxes "Paper and Cigar".....	15	26	5	8	7	15	...	58	57	12	14	
9 Brass Goods.....	12	30	4	8	4	12	...	58	55	17	14	
10 Brick and Drain Tile.....	44	102	...	41	3	31	13	61	43	45	50	
11 Butter.....	13	36	1	12	1	13	...	61	61	12	14	
12 Baskets.....	5	15	1	4	1	4	1	60	57	3	5	
13 Chairs and Chair Stock.....	18	63	45	18	...	17	1	58	56	25	43	
14 Cigars.....	65	49	17	35	30	64	1	56	54	5	7	
15 Clothing.....	31	24	22	8	23	31	...	58	56	18	13	
16 Coffins and Burial Caskets.....	5	13	1	2	3	5	...	60	59	5	5	
17 Confectionery and Bakeries.....	15	9	13	8	7	15	...	59	59	10	15	
18 Cooperage.....	61	204	9	58	3	55	6	62	61	52	67	
19 Cotton and Linen Mills.....	8	18	5	8	...	8	...	62	62	4	9	
20 Coal and Wood.....	30	83	2	26	4	30	...	60	59	99	63	
21 Distilled Medical Water.....	31	57	7	29	2	29	2	60	55	20	29	
22 Drugs and Chemicals.....	6	8	2	2	4	6	...	60	60	4	3	
23 Elec. Light Power and St. Rys...	73	168	1	72	1	73	...	89	89	153	189	
24 Flour and Feed.....	142	259	118	133	9	132	10	78	78	121	157	
25 Furniture and Upholstery.....	58	143	48	50	8	50	8	58	56	61	78	
26 Furs, Gloves and Mittens.....	16	11	9	10	6	15	1	58	58	8	5	
27 Grain Elevators.....	18	36	13	15	3	18	...	69	69	28	38	
28 Hardware Specialties.....	5	11	6	4	1	5	...	60	59	4	6	
29 Interior and Exterior Wood Work	21	40	8	14	7	20	1	58	53	15	18	
30 Iron Works (Malleable).....	11	30	12	10	1	11	...	66	61	9	12	
31 Knit Goods.....	20	28	12	13	7	19	1	58	57	19	20	
32 Laundries.....	106	106	22	30	76	106	...	60	59	97	90	
33 Leather.....	45	157	62	43	2	45	...	61	60	82	133	
34 Lithographing and Engraving....	12	3	13	1	11	12	...	54	54	7	9	
35 Lumber, Lath and Shingles.....	343	1269	33	331	12	262	81	63	60	510	1063	
36 Machine Shops, Foundries, Etc.	125	390	36	100	25	124	1	59	51	122	127	
37 Mattresses and Bedding.....	13	22	11	7	6	13	...	58	55	11	11	
38 Paints, Oil and Greases.....	13	21	8	7	6	10	3	64	53	13	14	
39 Paper and Pulp.....	48	208	39	46	2	45	3	134	134	57	61	
40 Printing, Pub. and Book Binding	224	167	72	66	158	224	...	59	59	117	155	
41 Railway Shops.....	23	128	2	22	11	23	...	59	58	35	56	
42 Refrigerators.....	6	17	4	5	1	4	2	60	60	13	17	
43 Saddlery, Harness and Whips....	14	14	11	7	7	10	4	60	60	11	6	
44 Sash, Doors and Blinds.....	74	248	32	65	9	70	4	59	58	90	108	
45 Sewer Pipe and Cement.....	6	15	6	5	1	6	...	60	58	7	9	

BY INDUSTRIES.

Running number.	HORSE POWER.			EMPLOYEES.					IMPROVEMENTS.		Wages paid in 1896.
	Steam.	Water.	Electricity, etc.	Full capacity.	Date of Inspection.				On building.	On machinery.	
					Male.	Female.	Total.	Between 14 and 18 years.			
1.....	3,148	145	10	3,608	2,822	2	2,824	85	\$8,325	\$10,282	\$970,838
2.....	1,655			1,811	1,252		1,252	14		17,000	666,012
3.....	12,212	42	50	4,222	3,304	375	3,679	350	450,635	111,578	1,930,832
4.....	1,279		50	2,381	1,774	1	1,775	184	13,200	35,150	720,400
5.....	417			681	302		302	12	4,998	3,500	131,351
6.....	1,734	715		3,331	2,569	267	2,836	350	90,750	40,000	1,092,367
7.....	1,790	90		929	765	2	767	149	2,500	2,250	178,457
8.....	473		14	709	335	331	666	144	11,000	3,017	144,752
9.....	616			584	408	9	417	13	4,500	7,500	156,696
10.....	2,295			1,397	955		955	59	7,250	5,000	225,372
11.....	181			69	58	2	60	11			22,889
12.....	345			151	122		122	22	500	6,750	28,875
13.....	3,175	25		3,837	2,949	307	3,256	379	12,000	12,000	763,625
14.....	373		1	1,546	912	364	1,299	207	300		407,529
15.....	416		63	1,857	346	833	1,179	134	548	2,104	669,227
16.....	195			121	106	11	117	5	2,400	5,500	37,084
17.....	477			1,061	355	421	776	277	200	500	232,559
18.....	3,739	1,000		2,949	2,391	2	2,393	393	11,575		678,364
19.....	760	813		710	261	360	621	66	22,075	32,650	129,502
20.....	4,566			2,271	1,669		1,669	3			722,408
21.....	459		15	471	277	20	297	38	8,250	9,000	137,039
22.....	123	350	3	79	46	18	64	4	16,200	15,500	22,201
23.....	20,901	3,380		958	901	5	906	1	82,196	191,550	459,806
24.....	14,639	4,852	73	1,605	1,220	14	1,234	6	19,250	19,450	641,479
25.....	4,956			4,416	3,149	35	3,184	425	19,250	18,862	945,461
26.....	91		14	636	132	260	392	65			162,665
27.....	4,969	80		381	323		323		800	25,000	142,226
28.....	327		10	487	357		357	46	2,000	8,800	155,560
29.....	953		30	734	402		402	26	1,600	2,500	159,643
30.....	581			1,692	1,227	3	1,230	163	18,000	4,707	389,211
31.....	709	5	10	2,584	248	2,027	2,275	687			427,883
32.....	1,305		14	1,506	324	821	1,145	48	19,900	18,665	283,210
33.....	4,977	790	3	5,600	4,615	282	4,897	182	120,250	62,000	1,874,429
34.....	370	28		579	506	39	545	100	55,000	10,000	267,332
35.....	67,324	11,075	30	24,398	17,949	113	18,062	1,080	251,674	73,171	5,309,002
36.....	4,829	386	165	7,495	5,271	27	5,298	106	21,250	28,800	1,722,081
37.....	796		16	726	516	76	592	145	2,400	1,100	270,973
38.....	537			238	208	1	209	23	4,000		79,054
39.....	11,792	6,015		3,958	2,779	710	3,489	82	123,000	145,000	1,409,173
40.....	1,177	54	382	3,270	2,508	509	3,017	235	60,600	46,510	1,273,056
41.....	2,348		50	4,147	3,910		3,910	9			1,510,095
42.....	1,350			854	636	10	646	106	14,800	12,662	122,191
43.....	174		16	528	242	207	449	132	400	75	131,287
44.....	7,947	131	35	6,297	4,652	40	4,692	550	62,775	28,647	1,389,344
45.....	920			308	174		174	1	1,000		64,176

TABLE III.—CLASSIFICATION

TOWN, CITY AND COUNTY.	No. establishments.		BUILDINGS.				PLANT.				HOURS per WEEK.		No. of engines.	No. of boilers.
	1 or 2 stories.	3 or more stories.	Owned.	Leased.	Running.	Idle.	Average when running full time.	Average date of inspection.	No. of engines.	No. of boilers.				
46 Ship Building.....	11	47	1	10	1	10	1	60	58	24	13			
47 Soap, Lye and Potash.....	10	8	4	9	1	10	....	59	57	9	12		
48 Stone (Cut and Quarried).....	23	42	2	21	2	22	1	59	58	26	23			
49 Stoves and Ranges.....	10	27	10	7	3	10	....	60	55	9	9		
50 Sheet Metal Work and Tin Ware	19	31	12	12	7	10	9	59	58	6	14			
51 Trunks	10	10	14	7	3	8	2	59	55	8	11			
52 Vinegar, Pickles and Yeast.....	12	27	5	9	3	12	....	59	53	11	21		
53 Veneer	8	34	4	8	....	8	....	60	60	10	11	
54 Wagons, Carriages and Sleighs...	89	236	49	78	11	88	1	59	56	45	55			
55 Willow Ware and Toys.....	4	8	5	4	....	4	....	59	59	4	5	
56 Windmills, Pumps and Tanks....	10	45	....	9	1	8	2	60	57	10	11		
57 Wooden Ware.....	6	28	....	6	....	6	....	60	60	11	15
58 Woolen and Worsted Mills.....	19	63	14	19	....	16	3	60	60	19	27		
59 Brooms and Brushes.....	13	12	2	10	3	13	....	60	53	1	1		
60 Miscellaneous	195	443	79	110	85	182	13	62	61	227	244			
Totals	2463	6043	1186	1843	620	228	182	62	596	2661	3636			

BY INDUSTRIES.—Continued.

Running number.	HORSE POWER.			EMPLOYEES.				IMPROVEMENTS.		Wages paid in 1896	
	Steam.	Water.	Electricity, etc.	Full capacity.	Date of inspection.				On building.		On machinery.
					Male.	Female.	Total.	Between 14 and 18 years.			
46.....	924			2,131	768		768	8	\$2,075		\$476,276
47.....	205			169	111	48	159	27			58,473
48.....	1,340			1,264	464	1	465	4	5,552	\$1,445	203,977
49.....	550		24	1,116	843	6	849	85			318,697
50.....	1,080		258	1,745	1,141	408	1,549	699			546,426
51.....	470			1,134	705	101	806	162	15,000	6,000	176,300
52.....	587			354	195	59	254	64	4,100	15,500	101,272
53.....	939			468	412	8	420	60	12,600	9,000	123,534
54.....	2,540	59	50	3,701	2,724	54	2,778	108	8,900	6,486	913,914
55.....	150	175		533	311	33	344	97	4,500	700	76,286
56.....	452	50	10	410	274		274	12	1,534	5,900	90,523
57.....	1,125	1,000		932	948		948	220	850	2,000	344,140
58.....	1,165	725		1,401	570	634	1,204	261	8,950	1,100	284,102
59.....			1	99	57		57	19			18,278
60.....	17,659	210	480	10,058	5,488	1,443	6,931	990	31,950	50,857	2,680,526
Totals	230,786	32,195	1877	133737	91,238	11322	102,560	9,041	\$1695608	1115768	\$35670340

ANALYSIS.

The foregoing tables under "General Inspection" are compiled from the reports of the inspection of 2,463 factories and workshops in this state.

The tabulations consist of three tables. Of these the first (I.) shows under the name of the city or place where located the condition with reference to the factory laws of each establishment inspected. The second (II.) and third (III.) tables, respectively, show, of the most important data in table I., the aggregates by cities and industries. These aggregates are again presented in the following table:-

AGGREGATES TABLES II AND III.

Total number of establishments inspected.....	2,463
Buildings—number 1 and 2 stories high.....	6,043
Buildings—number 3 or more stories high.....	1,186
Plants—number owned.....	1,843
Plants—number leased.....	620
Plants—number in operation time of inspection.....	2,281
Plants—number idle time of inspection.....	182
Average hours per week when running full time.....	62
Average hours per week time of inspection.....	59.5
Number of engines.....	2,661
Number of boilers.....	3,636
Horse power—steam.....	230,786
Horse power—water.....	32,195
Horse power—elec., gas.....	1,877
Employees—full capacity.....	130,737
Employees—male, date of inspection.....	91,238
Employees—female, date of inspection.....	11,322
Employees—total, date of inspection.....	102,560
Employees—between 14 and 18 years of age.....	9,041
Employees—under 14 years of age.....	79
Improvements on buildings.....	\$1,695,608
Improvements on machinery.....	\$1,115,768
Wages—amount paid in 1896.....	\$35,670,340

The above table shows, that at the general inspection 2,463 plants or establishments were inspected; that the total number of buildings wholly or partly occupied or used by these plants was 7,229; that in 1,843 cases the plants were owned, and in 620 cases the plants were leased by the parties operating them; that 2,281 plants were in operation and 182 were idle at the time of inspection; that the weekly average number of working hours when running full time was 62, and at the time of inspec-

tion 596; that 2,661 engines and 3,636 boilers were used; that the motive power employed was: steam 230,786 horse power; water, 32,195 horse power, and electricity, gas and naphtha, 1,877 horse power; that as to employees the full capacity of these plants was 133,737; that, at the time of inspection, 91,238 male, 11,322 female or a total of 102,560 wage earners were employed; that of these 9,941 were between fourteen and eighteen years of age and 79 under fourteen years of age; that the improvements on buildings amounted to \$1,695,608 and on machinery to \$1,115,768, and that wages paid in 1896 by the above plants amounted to \$35,499,840.

Below is presented in the order of their importance in this respect the different cities in the state in which 25 establishments or more were inspected:

CITIES HAVING THE LARGEST NUMBER OF ESTABLISHMENTS.

City or Place of Location.	Estab-lish-ments.	Per-centage
Milwaukee	636	25.82
Superior	106	4.30
La Crosse	76	3.09
Oshkosh	75	3.08
Racine	75	3.08
Green Bay	60	2.43
Sheboygan	55	2.23
Appleton	48	1.95
Madison	42	1.70
Eau Claire	39	1.58
Fond du Lac	35	1.41
Beloit	34	1.38
Wausau	34	1.38
Janesville	33	1.35
Manitowoc	30	1.21
Watertown	28	1.13
Ashland	26	1.05
Marinette	25	1.01
Waukesha	25	1.01
Other places	981	39.83
Aggregates	2,463	100.00

In above table we find the number of establishments and the proportion of these of the total in each one of nineteen cities in which the greatest number were inspected. Milwaukee leads all other places. In this city alone 636 establishments were inspected. This is 25.82 per cent., or more than one-fourth of the aggregate for the state. From this down, to the limit set, the order is as follows: Superior, La Crosse, Oshkosh, Racine,

Green Bay, Sheboygan, Appleton, Madison, Eau Claire, Fond du Lac, Beloit, Wausau, Janesville, Manitowoc, Watertown, Ashland, Marinette, and Waukesha. Of these Superior leads with 106 establishments. From this point the decrease is gradual down to Marinette and Waukesha where only 25 places in each case were inspected.

Classified as to the proportions of the total the following appears: Milwaukee alone practically covers 26 per cent. of the total places inspected. The other places enumerated above or cities in which 25 or more inspections were made cover 34.35 per cent.; while places in each of which less than 25 establishments were inspected cover 39.85 per cent. of the total for the state.

In the following table those industries are presented in each of which 25 or more establishments are inspected:

INDUSTRIES HAVING THE LARGEST NUMBER OF ESTABLISHMENTS.

Industries.	Estab-lish-ments.	Per-centage
Lumber	343	13.93
Printing and publishing	224	9.09
Flour and feed	142	5.77
Machine shops and foundries	125	5.07
Beer and malt	108	4.38
Laundries	106	4.30
Wagons and carriages	89	3.62
Sash, doors and blinds	74	3.00
Electric light, power and street railway	73	2.96
Cigars	65	2.64
Cooperage	61	2.48
Furniture and upholstery	58	2.35
Paper and pulp mills	48	1.95
Leather	45	1.83
Brick and drain tile	44	1.79
Agricultural implements	37	1.50
Clothing	31	1.26
Coal and wood	31	1.26
Bicycles	26	1.06
Other industries	733	29.76
Aggregate	2,463	100.00

As said this table includes all industries in the state in which 25 or more establishments were inspected. Lumber, etc., shows the greatest number, or 343 establishments. Next in order with 224 establishments we find Printing and Publishing. Machine Shops and Foundries show 125, Beer and Malt 108 and Laundries 106 establishments, respectively. In the order of their importance the remaining industries in the table stand as

follows: Wagons, Carriages, etc., Sash, Doors and Blinds, Electric Light and Power, Cigars, Cooperage, Furniture, etc., Paper and Pulp, Leather, Brick and Tile, Agricultural Implements, Clothing, Coal and Wood, and Bicycles. The first of these, Wagons, etc., shows 89, the last, or Bicycles, shows 26 establishments. In these nineteen industries therefore the decrease in importance is gradual.

BUILDINGS.—The tables show that the 2,463 establishments inspected either wholly or partly occupied 7,229 buildings. This is equivalent to an average of 2.93 buildings to each establishment. Of the buildings thus occupied or used 6,043 or 83.59 per cent. were one or two stories high, while 1,186 or 16.41 per cent. were three or more stories in height. Milwaukee, which has 26 per cent. of the establishments, or the largest by far of any manufacturing center in the state, also has the largest number of buildings, or 1,529, equal to about 21.15 per cent. of the total. Next in order are Superior and Racine with about 314 buildings each. In the classification as to industries Lumber ranks the highest, having 1,302 buildings or 18.15 per cent. of the total. Lumber is also the largest industry in the state. Beer and Malt, while only having 4.38 per cent. of the establishments comes next with 516 buildings or 7.76 per cent. of the total. On the whole the proportion of buildings to the number of establishments does not vary greatly, in the remaining industries, from these figures.

OWNED OR LEASED.—Of the establishments 1,843 or 78.09 per cent. were owned by the parties operating them while 620 or 21.91 per cent. were leased. The relative number in each case vary greatly not only between the different industries but also as between the cities. While no particular explanation can be offered for this, it would appear from an examination of tables I, II and III that industries which are, comparatively speaking, new and also those that produce on a smaller scale are mostly carried on in leased quarters. The value of the land also seems to have some effect in this respect. Comparisons of the tables mentioned will suggest these and many other reasons and will therefore be found interesting. As a rule, however, no general cause can be given that will apply to more than a limited number of establishments.

RUNNING AND IDLE.—The tables show that of the 2,463 establishments inspected 2,281 or 92.60 per cent. were in operation and that 182 establishments or 7.40 per cent. were idle at the time of inspection. The proportion of idle to those in operation is very irregular both as between industries and localities. As besides this, no particular reasons were given for the fact that the plants happened not to be in operation there is little to be said on this point. It is likely, however, that as many inspections were made during such parts of the seasons when repairs are mostly made, or when many industries find it the most convenient to shut down, temporarily, or for these other reasons, the idleness can be easily accounted for.

HOURS IN OPERATION.—The average hours in operation weekly when running full time is seen to be 62 and the average at the time of inspection is 59.4 hours per week. These figures, however, do not represent the average length of what may be considered the actual working day. The reason for this is, that in the figures given all overtime, and night work, was included. In both cases, however, the actual time in operation for each establishment is shown in table I.

MOTIVE POWER.—We see from the table that the establishments inspected utilized 2,661 Engines and 3,636 Boilers having a capacity of 230,786 horse-power. This is equal to about 64 horse-power to each Boiler. Water-power to the extent of 32,195 horse-power were also used. Steam-power was, of course, used in all industries and generally varied in amount with the importance of the industry. Water-power was used to any great extent only in Boots and Shoes, Cooperage, Cotton Mills, Electric Light Plants, Flour and Feed, Leather, Lumber, Paper and Pulp, Woodenware, and Woolen and Worsted Mills. Only 1,877 horse-power of electricity and gas were used for motive power.

PERSONS EMPLOYED.—Under this head the tables show that the number of hands required when the 2,463 establishments included were running to their full capacity was 133,737; that at the time of inspection they only employed 102,560 or 76.68 per cent. of their full capacity. The same tables also show that of the 102,560 thus employed, 91,238 persons or 88.96 per cent. were male and 11,322 persons, or 11.04 per cent. were female;

that 9,941 persons, or 9.69 per cent. were between fourteen and eighteen years of age and that 79 were under fourteen years of age.

The following presentation shows the proportion of their capacity to which the establishments in industries employing 1,000 or more persons were employed at the time of inspection:

PROPORTION EMPLOYED OF FULL CAPACITY FOR EMPLOYMENT.

Industries.	No. of establishments.	Full capacity of establishments	Em- ployes.	Per cent.
Lumber, lath and shingles.....	343	24,398	18,062	74.03
Machine shops, etc.....	125	7,495	5,298	70.68
Leather	45	5,600	4,897	87.44
Sash, doors and blinds.....	74	6,297	4,692	74.51
Railway shops	23	4,147	3,910	94.28
Beer and malt.....	108	4,222	3,679	87.14
Paper and pulp.....	48	3,958	3,489	88.15
Chairs and chair stocks	18	3,837	3,256	84.85
Furniture	58	4,416	3,184	72.10
Printing, publishing and book binding.....	224	3,270	3,017	92.26
Boots and shoes	28	3,331	2,836	85.14
Agricultural implements	37	3,608	2,824	78.27
Wagons, carriages and sleighs.....	89	3,701	2,778	75.06
Cooperage	61	2,949	2,393	80.47
Knit goods	20	2,584	2,275	88.04
Bicycles	26	2,381	1,775	74.55
Coal and wood	30	2,271	1,669	73.49
Sheet metal goods.....	19	1,745	1,549	88.76
Cigars	65	1,546	1,299	84.02
Beef and pork packing	12	1,811	1,252	69.13
Flour and feed	142	1,605	1,234	75.01
Iron goods, malleable	11	1,692	1,230	72.69
Woolen and worsted mills	19	1,401	1,204	85.94
Clothing	31	1,857	1,179	63.49
Laundries	106	1,506	1,145	76.02
Other industries	701	32,119	29,434	70.03
	2,463	133,737	102,560	76.68

The above presentation shows for the industries included the number of establishments considered, the full capacity of employes, the number of persons employed at the time of inspection, and the percentage of the persons employed, when inspected, of the total capacity for employment. The industries are presented in the order of their importance with regard to the number employed at the time of inspection.

Twenty-five industries are included. Of these Lumber, etc., is easily in the lead. Examining the table we find that this industry alone had 343 establishments, or nearly 14 per cent. of those

inspected; that it had capacity for 24,398 persons, or over 18 per cent. of the total capacity for the state; and that at the time of inspection it employed 18,062 persons, or nearly 18 per cent. of the total number employed. From this there is a rapid descent, particularly in the number of persons employed. Machine Shops, etc., show the next highest number of employes, or 5,298. Compared with Lumber this aggregate appears small, being only about 29 per cent. thereof. Leather and Sash, Doors and Blinds employed 4,897 and 4,692 persons respectively. Of the remaining industries six employed over 3,000 but less than 4,000 persons, five employed over 2,000 but less than 3,000 persons, and ten employed over 1,000 but less than 2,000 persons each. As to the number of establishments and capacity of same the order is not quite the same. The variations, however, are easily seen and need no further explanations.

Of the aggregate capacity for employment 76.68 per cent. are seen to have been employed at the time of inspection. The proportion employed varies as between the different industries. The highest and lowest are represented by Railway shops and Clothing Manufacture, the former employing 94.28 out of every 100 persons of its capacity, the latter only 63.49 of every 100 persons of its capacity. These two industries thus represent the extremes between which the proportion in the other industries will be found.

It should perhaps be repeated here that by full capacity is meant the greatest number of persons that could possibly be employed in these plants. While no data was gathered upon this point, it is very likely that the standard in the number of employes, which was usually regarded as the full capacity was, in most cases, somewhat lower than the aggregate shown. If such is the case, it also follows that the difference between the full capacity as shown and the actual number employed, instead of measuring the exact proportion to which the plants fell short of full employment, in the sense in which this term is used, only indicates that, as a whole, the aggregate capacity was not employed.

The following table shows the number of establishments, their

capacity for employment and the number and proportion of this capacity actually employed at the time of inspection, for each city in the state in which 1,000 or more persons were employed.

PROPORTION OF FULL CAPACITY EMPLOYED.

Cities.	Estab-lish-ments.	Full ca-pacity of estab-lishm'ts.	Persons em-ployed.	Per-cent.
Milwaukee	636	49,364	35,873	72.67
Racine	75	7,326	5,281	72.08
Superior	106	7,332	4,934	67.29
Sheboygan	55	5,223	4,226	80.91
Oshkosh	75	4,852	3,745	77.18
La Crosse	76	3,895	2,948	75.68
Kenosha	20	2,512	2,174	86.54
Eau Claire	39	2,147	1,855	86.40
Marinette	25	2,021	1,545	76.44
Green Bay	60	1,735	1,410	81.27
Wausau	34	1,515	1,389	91.69
Beloit	34	1,652	1,373	83.11
Menasha	18	1,448	1,324	91.43
Appleton	48	1,705	1,306	76.59
Janesville	33	1,393	1,162	83.41
Fond du Lac	35	1,318	1,128	85.58
Madison	42	1,332	1,090	81.83
Merrill	12	1,256	1,032	81.16
Other places	1,040	35,711	28,765	80.55
	2,463	133,737	102,560	76.68

In the preceding table it appears that in 18 cities the factories, etc., inspected employed each 1,000 or more persons. From a manufacturing point of view these cities are of considerable importance. Comparing their aggregates with the aggregates in the same respects, for the state, we find that they cover 58 per cent. of the establishments, 73 per cent. of the employing capacity and 72 per cent. of the persons employed. Another striking fact appears from this comparison. The cities included were found to embrace 58 per cent. of the establishments and 73 per cent. of the employes for the state. The proportion of the establishments included is therefore much lower than the proportions of the employing capacity and persons employed. This difference indicates that the establishments located in the above cities are considerably above the average in the point of productive capacity.

The cities are presented in the order of their importance as to the number of persons employed. Milwaukee is by far the larg-

est manufacturing center in the state and therefore heads the list. Of the establishments, that city alone covers 45 per cent. of the aggregate for the 18 cities and 26 per cent. of the aggregate for the state. Of the employing capacity it covers 50 per cent. of that for the cities named and 37 per cent. of the aggregate for the state. Of the persons employed it shows 49 per cent. for the places included and 35 per cent. of the aggregate for the state. Milwaukee alone thus embraces 26 per cent. of the establishments, 37 per cent. of the employing capacity, and 35 per cent. of the persons employed, for the state. These facts show, perhaps, better than it could be presented in any other way, the importance of Milwaukee as a manufacturing center.

In table III we find the number of male and female and the number of persons 18 years of age or under employed in the different industries. No effort, however, was made in that table to present the proportion in each case in percentages. This method of expressing relations is often the best. Not only does it seem to increase the meaning of such facts, but they become plainer and more adaptable to future use and comparison. For these reasons the percentage in each case for each one of the industries included was ascertained and shown separately in the following table:

EMPLOYES: PERCENTAGE OF MALE, FEMALE AND UNDER 18 YEARS OF AGE IN DIFFERENT INDUSTRIES.

Industries.	Percent- age of male per- sons em- ployed.	Percent- age of fe- male per- sons em- ployed.	Percent- age under 18 years of age.
Agricultural implements	100.	.....	3.01
Beef and pork packing.....	100.	.....	1.11
Beer and malt	89.80	10.20	9.51
Bicycles	100.	.....	10.36
Boiler works	100.	.....	3.97
Boots and shoes	90.59	9.41	12.34
Boxes, packing	100.	.....	19.42
Boxes, paper and cigar	50.30	49.70	21.63
Brass goods	100.	.....	3.11
Brick and drain tile.....	100.	.....	6.17
Brooms and brushes.....	100.	.....	33.33
Butter	96.67	3.33	1.83
Baskets	100.	.....	18.03
Chairs and chair stock	90.57	9.43	11.64
Cigars	70.21	29.79	15.93
Clothing	29.34	71.66	11.36
Coffins and burial caskets	90.60	9.40	4.27
Confectionery and bakeries	45.75	54.25	35.70
Cooperage	100.	.....	16.37
Cotton and linen goods	42.03	57.97	10.62

EMPLOYEES: PERCENTAGE OF MALE, FEMALE AND UNDER 18 YEARS OF AGE IN DIFFERENT INDUSTRIES.—Continued.

Industries.	Percent- age of male per- sons em- ployed.	Percent- age of fe- male per- sons em- ployed.	Percent- age under 18 years of age.
Coal and wood	100.	.....	0.17
Distilled medical water	93.26	6.74	12.79
Drugs and chemicals	71.87	28.13	6.25
Electric light, power and street railway	99.45	0.55	.....
Flour and feed	98.87	1.13	0.40
Furniture and upholstery	98.86	1.14	13.35
Furs, gloves and mittens	33.67	66.33	16.58
Grain elevators	100.	.....	.....
Hardware specialties	100.	.....	12.89
Interior and exterior wood work	100.	.....	6.46
Iron works, (malleable)	100.	.....	13.25
Knit goods	10.90	89.10	30.20
Laundries	28.30	71.70	4.19
Leather	94.65	5.35	3.73
Lithographing and engraving	91.01	8.99	18.35
Lumber, lath and shingles	99.30	0.70	5.98
Machine shops and foundries	99.28	0.72	2.00
Mattresses and bedding	87.16	12.84	24.48
Miscellaneous	79.47	20.53	14.27
Paints, oils and greases	100.	.....	11.00
Paper and pulp	79.65	20.35	2.35
Printing, publishing and book binding	83.12	16.88	7.78
Railway shops	100.	.....	0.23
Refrigerators	98.45	1.55	16.71
Saddlery, harness and whips	53.90	46.10	30.95
Sash, doors and blinds	99.14	0.86	11.72
Sewer pipe and cement	100.	.....	0.52
Ship building	100.	.....	1.03
Soap, lye and potash	69.81	30.19	16.98
Stone, (cut and quarried)	100.	.....	0.86
Stoves and ranges	99.29	0.71	10.01
Sheet metal work and tinware	73.66	26.34	45.12
Trunks	87.47	12.53	20.09
Vinegar, pickles and yeast	76.77	23.23	25.19
Veneer	98.09	1.91	14.29
Wagons, carriages and sleighs	98.05	1.95	3.81
Willowware and toys	90.41	9.59	28.19
Wind mills, pumps and tanks	100.	.....	4.38
Woodenware	100.	.....	23.20
Woolen and worsted mills	47.34	52.66	21.67
	88.60	11.40	9.69

This table shows the proportion of male, female and persons under 18 years of age that were employed in each industry. We have seen already that the aggregate persons employed in all industries was 102,560; that of these 91,238 were males, 11,322 were females, and that 9,941 were between 14 and 18 years of age. This is equivalent to 88.60, 11.40 and 9.90 per cent. respectively. As to the proportion of male and females the variation between the different industries is great. In some the ma-

majority are females, in others males only are employed. Thus there were eight industries in which about 50 per cent., or more, were females, while on the other hand, there were twenty-two industries in which no female help to speak of was employed. In industries employing female help to the extent that it was taken into account here, the highest proportion, or 89.10 per cent. of the whole, was found in Knit Goods, and the lowest, or .71 per cent., was found in Stoves, etc. In nine industries the proportion of females is less than 50 but more than 20 per cent., while in twenty-two the proportion is less than 20 per cent.

All industries except Grain Elevators and Electric Light or Power Plants employed children or persons 18 years of age or under. The proportion, however, varied greatly in the different cases. In Sheet Metal goods, for instance, it was 45.12 and in Coal and Wood .17 per cent. The first of these is also the highest for all the industries, while the last is the lowest. Between these, or the highest and lowest proportions, there are great variations in this respect. Thus, there are five industries below the highest in which the proportion is over 30 per cent. and eight more in which it is between 20 and 30 per cent. In twenty-one of the industries the proportion varies from 10 to 20 per cent. While in twenty-four it is less than 10 per cent. of the whole. The largest proportion of young persons were invariably found in the larger manufacturing centers such as Milwaukee, Oshkosh, Racine, and other cities of this class.

IMPROVEMENTS.—According to the returns or facts presented there was \$2,811,376 expended for general improvements on the different plants inspected during the period covered. Of this amount \$1,695,608 or 60.31 per cent. was expended on Buildings and \$1,115,768, or 39.69 per cent. on Machinery. Table I shows the amount expended for these purposes by the different plants. Tables II and III show, respectively the total amount expended in each city and for each industry.

The original intention was to include, under "Improvements," only such expenditures as had been made for the extension of the plants and for replacing old machinery and buildings. It appeared from the reports, however, that in many cases the amount given also included ordinary repairs. As the

different items could not be separated, the figures given above cannot, strictly speaking, be said to represent new improvements only.

WAGES.—As explained already, the inspectors obtained from each one of the establishments inspected the amount paid in wages during the next preceding year. While the wages for each establishment was thus reported it was thought best not to give these figures in detail. For each city or place inspected and for each industry represented by four or more establishments the total amount of the wages paid has been shown separately.

From tables II and III we find that the amount of wages paid during the year in question was \$35,670,340. It was the aim of this department to reach every establishment in the state in which 5 or more persons were employed, no matter where located. In this, however, we were not quite successful. The industries in this state are pretty well scattered. Many plants are located in small and out of the way places, often several miles from any railroad. While many such plants were visited there were also some which could not be reached. These latter are, of course, not included. The reports of the factory inspectors, therefore, do not quite amount to a census of the manufacturers of this state. The figures presented, however, cover, by far, the larger proportion of the manufacturing capacity. This may be seen by a comparison of the aggregate number of persons employed and the amount of wages paid by the establishments inspected, with the corresponding figures, as shown in the census of 1895. The census shows that 118,117 persons were employed in the factories, etc., in this state and that these were paid \$42,882,886 in wages. The inspection embraces 102,560 persons, or 87.79 per cent. of the total for the census and shows that \$35,670,340, or 88.33 per cent. of the amount for the census was paid them in wages. The establishments included in the inspection are also, as is plain, the best equipped and most productive and while the indications from the above figures are that they embrace about 88 per cent. of the total for the state their productive capacity is in reality considerably above this percentage.

Table II. shows the amount of wages paid in the different

cities or places inspected. These places are presented in alphabetical order. As regards the amount paid, Milwaukee is ahead. In this city alone \$15,065,763, or 42.24 per cent. of the total for the state was paid in wages. Next in order is Racine, West Superior, Oshkosh, La Crosse, and Sheboygan. In each one of these five cities the wage roll varied from somewhat over one million to one million seven hundred thousand dollars. The total wages paid in the six cities mentioned amounted to about 61 per cent. of the total included. In Kenosha nearly one million and in Eau Claire over five hundred thousand were paid in wages. Six other cities paid over four hundred thousand and in another six over three hundred thousand were paid. In the above 20 cities \$27,978,806, or over 78 per cent. of the total for the state constituted, according to table II, the total wage-roll.

The wages paid has also been classified as to industries. This classification is presented in table III. As in the case of cities or places inspected, the industries are given in alphabetical order. In studying this table it is found that Lumber, etc., is by far the largest industry in the state. The expenditures for labor in this industry alone amounted to \$5,309,002, or about 15 per cent. of the aggregate wages for all industries. In all the other industries the wages paid was considerably less than this. In eight, however, the amount varied from about one to about two millions and, taken together, amounted to \$12,201,377, or about 34 per cent. of the whole. Eleven other industries, in which the respective amounts varied from about one-half to about one million, paid \$8,238,154, or 23 per cent.; and again, seven others, each of which paid less than a half million, show an aggregate wage of \$2,823,542, or about 8 per cent. of the aggregate. In 27 industries therefore, or less than one-half of all included, \$28,572,075, or practically 80 per cent. of the aggregate for all industries was paid in wages.

INDEX TO MANUFACTURERS.

In the following table is given a list of the factories visited and reported upon by the inspectors in 1897 and 1898. Each firm has been given an office number for convenience and to save space. This table furnishes the key to the orders, accidents, etc., reported. Every accident and order has a number corresponding to the one before the firm name in this table. Thus by referring to the names and number given below it is possible to tell what factory the order or accident was reported from and space is saved by publishing the firm name in this table only and representing it by its respective number in the tables which relate to the factory inspection. This table, besides giving the name of every firm visited by the inspectors, gives the location by town or city; the kind of goods made; when the factory was established and date of inspection. The 2,463 factories shown in this list were all reported upon at length by the inspectors and these reports have been made the basis for other tables. Many of the larger establishments were visited every few months in order to keep close watch on child labor. Nearly 200 more factories were inspected during the two years covered here than during the biennial period of 1895-96, when 2,284 plants were reported. The other information furnished with the names in this table gives an insight into the variety and extent of the industrial establishments in the state.

MILWAUKEE.

Name of Firm.	Location.	Kind of Goods Made or Work Done.	Estab- lished.
1 Abel & Bach Trunk Factory.....	Cor. 10th St. and St. P. Ave.....	Trunks and Traveling Bags.....	1881
2 Abeler & Mahler.....	Cor. Oneida and River Sts.....	Pants, Shirts, Overalls.....	1885
3 Abend Post.....	84 Mason St.....	Publishers and Printers.....	1875
4 Charles Abresch Co.....	415 Poplar St.....	Wagons and Carriages.....	1874
5 Ackermann, Robt.....	816 11th St.....	Shoes and Slippers.....	1888
6 Acme Laundry Co.....	964 Winnëbago St.....	Laundry.....	1895
7 Adamant Mfg. Co.....	Virginia foot of 3d Ave.....	Adamant Wall Plaster.....	1890
8 Adams Stamp & Stencil Co.....	428 East Water St.....	Rubber Stamps and Metal Engraving.....	1882
9 Adams F. F., Tobacco Co.....	W. Water and Clybourn.....	Smoking and Chewing Tobacco.....	1846
10 Adler D. & Son, Clothing Co.....	325 East Water St.....	Clothing.....	1848
11 Allis E. P. Co., Reliance Works.....	Clinton St. and National Ave.....	Engines and Mill Machinery.....	1859
12 Allis E. P., S. Bay Foundry.....	Stewart Ave.....	Boilers and Heaters.....	1888
13 Amazeen Co.....	Rear 318 Wells St.....	Boots and Shoes.....	1883
14 American Box Toe Co.....	Mich. and Milwaukee.....	Metal Box Toe.....	1896
15 Ambrosia Chocolate Co.....	331 Fifth St.....	Chocolate and Cocoa.....	1894
16 American Candy Factory.....	85 Huron St.....	Candy.....	1889
17 American Fine Art Co.....	256 S. Water St.....	Lithographing.....	1893
18 American Steam Laundry.....	173 2d St.....	Laundry.....	1885
19 American Rheostat Co.....	Mich. and Milwaukee.....	Automatic Motor Starter.....	1897
20 Andrae T. & Son.....	Clinton and Florida Sts.....	Bicycles.....	1896
21 Andrews, C. E. Co.....	300 and 302 Broadway.....	Baking Powder.....	1867
22 Andrews, Fred. & Co.....	Canal St.....	Cut and Sawed Stone.....	1880
23 Anstedt, C. & Son, Leather Co.....	550 Commerce.....	Leather.....	1886
24 Atlantic Steam Laundry.....	483 Third St.....	Laundry.....	1886
25 Atlas Mills.....	Commerce St.....	Milling.....	1883
26 Anslinger, Charles.....	Scott St.....	Furniture.....	1892
27 Badger Dye Works.....	115 North Ave.....	Dyeing and Cleaning.....	1890
28 Badger Engraving Co.....	E. Water and Mich. St.....	Wood and Plate Engraving.....	1897
29 Badger Illuminating Co.....	Third and Poplar St.....	Electric Arc Light.....	1886
30 Badger Laundry.....	526 Twelfth St.....	Laundry.....	1880
31 Badger Nail Co., The.....	Muskego Ave.....	Wire Nails.....	1897
32 Badger State Shoe Co.....	55 and 59 Fourth St.....	Boots and Shoes.....	1875

53	Bailey Heating Co.....	225 Cedar St.....	Steam and Hot Water Heaters.....	1880
34	Baird Press, The.....	Mich. and Milwaukee Sts.....	Job Printing	1885
35	Bamboo Cycle Co.....	249 and 251 Lake St.....	Bicycles	1897
36	Bastom, Alexander	423 Fourth St.....	Machinist and Repair Shop.....	1873
37	Baumbach, Charles, Co.....	Market and Oneida	Oils and Paints.....	1850
38	Bayley, Wm. & Sons, Co.....	732 and 766 Greenbush.....	Foundries and Machinists.....	1856
39	Bay View Steam Laundry.....	1053 Kinnikinnic Ave.....	Laundry	1893
40	Beals, Torrey & Co.....	62 Third St.....	Boots and Shoes.....	1883
41	Bechtner, Paul Co., The.....	Foot of Third Ave.....	Yeast, Vinegar and Pickles.....	1893
42	Beck, C. A.....	Canal St.....	Planing Mill	1870
43	Becker, Wm., Leather Co.....	Commerce St.....	Leather	1868
44	Benedict & Co.....	402 Grand Ave.....	Clothing	1878
45	Benjamin, H. M., Coal Co.....	River St. and Juneau Ave.....	Coal and Wood.....	1873
46	Benning, Joseph	814 Winnebago St.....	Granite and Marble Cutter.....	1885
47	Berger Bedding Co.....	529 Market St.....	Spring Beds, Mattresses.....	1888
48	Berghoefter, Lupinski Mfg. Co.....	967 N. Water St.....	Millwright and Machinist.....	1889
49	Beyer, J. V.....	433 Commerce St.....	Upholstering	1875
50	Biddell Chemical Works.....	787 Thirtieth St.....	Chemicals	1893
51	Biersach & Niedermeyer.....	216 Fifth St.....	Ornamental Iron and Copper.....	1873
52	Birkenwold, S., Co.....	122 Rear of Fowler	Packing House Fixtures.....	1857
53	Blatz, Val., Brewery Co.....	651-657 Broadway	Bottling Beer	1877
54	Blatz, Val., Brewery Co.....	Broadway	Brewers and Malsters	1851
55	Boden Packing Co.....	Muskego Ave.....	Beef and Pork Packers.....	1894
56	Bogenberger Bros.....	290 Fifth St.....	Galvanized Iron Works.....	1891
57	Bradley & Metcalf Co.....	Chicago and E. Water	Boots and Shoes.....	1843
58	Brand Stove Co.....	235 Sixth St.....	Stoves and Ranges.....	1868
59	Bremer, Wm.....	285 Oregon St.....	Iron and Wire Goods.....	1873
60	Brillmeyer & Son.....	317 Sherman St.....	Church Furniture.....	1895
61	Brodesser Elevator Co., The.....	512 Commerce St.....	Freight and Pass. Elevators.....	1884
62	Brown, Thomas H.....	133 Michigan	Carriages	1860
63	Brown's Laundry.....	470 Farwell	Laundry	1894
64	Bruess & Martin.....	880 Seventeenth St.....	Interior Woodwork.....	1893
65	Bruess Ritter Co., The.....	418 Ninth St.....	Bar-room Fixtures.....	1893
66	Bub, Joseph, Co.....	317 Michigan St.....	Upholstering	1893
67	Bucyrus Steam Shovel and Dredge Co.....	South Milwaukee.....	Mining Machinery.....	1892
68	Burdick, Armitage & Allen.....	Cor. Milwaukee and Mich.....	Job Printing	1887
69	Burnham Bros.....	525 Howell Ave.....	Brick	1856
70	Burnham Bros.....	Wauwatosa	Brick	1893
71	Burnham, John L.....	Foot of Park St.....	Brick	1860
72	Burroughs, Geo.....	424 E. Water St.....	Mfg. Trunks.....	1867

MILWAUKEE—Continued.

Location.	Name of Firm.	Kind of Goods Made or Work Done.	Estab- lished.
73 Buxbaum Boiler Works.....	Virginia St.....	Boilers	1893
74 Campbell, H. M.....	514 Grand Ave.....	Laundry	1880
75 Connor Bros.....	522 State	Laundry	1878
76 Carnillie Bros.....	Washington & Barclay.....	Office Fixtures.....	1868
77 Carpenter, Underwood F'cty Co.....	518 Grand Ave.....	Bakery and Confectionery.....	1874
78 Castalia Bottling Works.....	Wauwatosa	Weis Beer and Mineral Water.....	1893
79 Centennial Bell & Iron Foundry.....	238 Oregon St.....	Brass and Iron Castings.....	1876
80 Chase Brick Co.....	Lincoln Ave.....	Brick	1876
81 Chi., M., St. P. R'y Repair Shops.....	Garfield Ave.....	Rep. Locomotives and Cars.....	1858
82 Chi., M., St. P. R'y Car Shops.....	Merrill Station.....	Rep. Locomotives and Cars.....	1888
83 Chi. & N. W. Repair Shop.....	Lake Shore.....	Rep. Locomotives and Cars.....	1855
84 Chief Cycle Mfg. Co.....	West Water St.....	Bicycles	1896
85 Citizen's, The.....	Milwaukee and Mich.....	Publishing	1896
86 Clement Williams & Co.....	424 Broadway.....	Furniture	1882
87 Coldewe, G., & Co.....	827 Sixth St.....	Brick Moulds	1882
88 Columbia Publishing Co.....	415 East Water.....	Publishing and Printing.....	1871
89 Colnic, C.....	219 Eighth St.....	Art Metal Works.....	1893
90 Conrad Bros.....	Commerce St.....	Leather	1869
91 Consolidated Vinegar Works, The.....	298 Milwaukee St.....	Vinegar	1886
92 Conway Cabinet Co., The.....	20th St. and St. Paul Ave.....	Mantels and Cabinet Work.....	1855
93 Cook & Hyde Stone Co.....	31st and Galena.....	Cut Stone	1853
94 Cox, Joseph L.....	87 Sixth St.....	Metal Skylights	1884
95 Cream City Brewery.....	499 Thirteenth St.....	Beer	1879
96 Cream City Brewing Co.....	510 Thirteenth St.....	Bottling Beer	1886
97 Cream City Brick Co.....	St. P. Ave. between 13th and 14th.....	Brick	1890
98 Cream City Broom Factory.....	516 Lee.....	Brooms	1876
99 Cream City Brush Works.....	611 Chestnut	Brushes	1892
100 Cream City Can Works.....	263 Reed St.....	Tin Cans	1893
101 Cream City Hat Co.....	255 East Water St.....	Gloves	1890
102 Cream City Laundry.....	489 Broadway.....	Laundry	1886
103 Cream City Sash and Door Co.....	7th Ave. and Park St.....	Sash, Doors and Blinds.....	1890
104 Cream City Woven Wire Works.....	724 Canal St.....	Wire Mattresses.....	1886

105	Crow Stove Polish Co.....	26th St. and Galena.....	Stove Polish.....	1883
106	Chrystal Soap Co.....	56 Fifth St.....	Toilet Soap	1890
107	Cudahy Bros. Co.....	Cudahy	Beef and Pork Packers.....	1856
108	Cohn Bros.	340 Broadway.....	Shirts, Pants and Overalls.....	1870
109	Carpeles Co.....	13th and St. Paul Ave.....	Trunks	1874
110	Daisy Roller Mills.....	Foot Wash. Ave	Flour	1886
111	Chain Belt Co.....	Park bet. 13th and 14th Ave.	Belts and Sprocket Wheels.....	1870
112	Damonast, The.....	Montgomery Block.....	Publishing and Printing	1890
113	Danialson, B. J.....	875 Clinton St.....	Interior Woodwork	1893
114	Darsch, J., & Son.....	205 Wells St.....	Carriages and Wagons.....	1870
115	Davelaar, Martin.....	South City Limits.....	Brick	1876
116	Davis, J. U.....	Mich and Milwaukee.....	Gold and Silver Plating.....	1893
117	Davis Bros. Mfg. Co.....	576 Clinton St.....	Boilers and Smoke Stacks	1890
118	De Guenther Steam Laundry.....	133 Mason St.....	Laundry	1880
119	De Long, H.....	636 Park St.....	Pictures, Frames.....	1893
120	Diamond Ink Co.....	Cambridge Ave.....	Inks, Muclage.....	1875
121	Doelger & Kirsten.....	507 Cedar St.....	Machinist	1892
122	Drake Mfg. Co.....	15th St. and St. Paul Ave.....	Bicycle Wood Rims.....	1896
123	Dunke, John.....	1016 Sherman Ave.....	Tanks and Casks.....	1888
124	Dutcher Co., T. A. & P. E.....	Rear 607 Kinnikinnic Ave.....	Wrought Iron and Steel Castings.....	1888
125	Eagle Coffee and Spice Mill.....	336 Fourth St.....	Coffee and Spices.....	1878
126	Eagle Flouring Mill.....	Commerce St.....	Flour	1846
127	Eagle Horse Shoe Co.....	South Milwaukee	Horseshoes	1892
128	Eagle Laundry.....	683 Kinnikinnic Ave.....	Laundry	1895
129	Eagle Lye Works.....	28 Erie St.....	Lye and Potash.....	1870
130	Eagle Mfg. Co.....	622 Poplar St.....	Furniture	1887
131	Eagle Mirror and Art Glass Works.....	Cor. Park and Hanover.....	French Plate Mirrors.....	1893
132	Eifinger, Lucas.....	1501 Cherry St.....	Brushes	1895
133	Elkert Bros.....	1124 Eighth St.....	Leather	1866
134	Elmore, R. P. Co., The.....	Germania Bldg.....	Coal and Wood.....	1886
135	Elmwood Cycle Co., The.....	Pierce and 3d Ave.....	Bicycles	1887
136	Elwood Cycle Co., The.....	5th Ave. and Pierce St.....	Bicycles	1897
137	Empire Laundry.....	502 Twenty-fifth St.....	Laundry	1888
138	Engel, Frank.....	626 Hubbard St.....	Tanner	1893
139	Enterprise Box and Lumber Co.....	Muskego Ave. and Canal St.....	Packing Boxes	1865
140	Esch & Son.....	58 Clybourn	Trucks and Transfer Wagons.....	1846
141	Eureka Steam Laundry.....	11 Erie St.....	Laundry	1894
142	Evening Wisconsin, The.....	Mich. and Milwaukee.....	Publishers	1847
143	Everly, J. M.....	298 Broadway	Job Printing.....	1884
144	Excelsior Pub. Co.....	86 Mason St.....	Publishing and Printing.....	1883

MILWAUKEE—Continued.

Name of Firm.	Location.	Kind of Goods Made or Work Done.	Estab- lished.
145 Faust Kraus Co., The.....	50 S. Water St.....	Millers	1876
146 Falk Mfg. Co.....	Wauwatosa	Street R'y Work.....	1894
147 Ferneke & Co., J.....	348 East Water.....	Candy	1867
148 Ferge & Kiepper.....	527 Park St.....	Ex. and In. Woodwork.....	1888
149 Fette & Meyer Coal Co.....	513 River St.....	Coal and Wood.....	1886
150 Filer & Stowell.....	Beecher St.....	Mill Machinery	1867
151 Finkner, H.....	Fowler St.....	Wagons	1883
152 Fischer, Joseph.....	2526 Lisbon Ave.....	Cooperage	1893
153 Fischer Cleaning Works.....	547 East Water St.....	Dyeing	1873
154 Fixter, Joseph.....	Cor. 2nd and Cherry St.....	Cooperage	1857
155 Flint, J. G.....	110 E. Water St.....	Coffee and Spice Mill.....	1858
156 Flint, J. G., Jr.....	114 W. Water St.....	Cut Tobacco.....	1870
157 Foersch, William.....	Lisbon Ave. bet. 23d and 24th St.....	Wagons	1885
158 Frank & Son Packing Co.....	644 Market St.....	Sausage	1861
159 Franzen, William.....	Lincoln Ave.....	Bottles and Fruit Jars.....	1894
160 Friedenker Publishing Co.....	470 E. Water St.....	Publishing	1891
161 Friedlaender, M.....	State bet. 5th and 6th St.....	Mittens	1888
162 Friend Bros. Clothing Co.....	358 Broadway	Clothing	1847
163 Froedtert Bros. Grain and Malt Co.....	Cor. 7th and Cherry.....	Maltsters	1885
164 Froedtert Bros. Grain and Malt Co.....	189 Sherman.....	Maltsters	1877
165 Froedtert Bros. Grain and Malt Co.....	518 Chestnut.....	Elevator and Milling.....	1872
166 Fuldner, L., & Co.....	186 and 188 Reed St.....	Rectifiers of Spirits, etc.....	1858
167 Fuller Warren Co., The.....	Wright and 32d St.....	Stoves and Furnaces.....	1890
168 Galland-Henning Pneu. Malt. Drum. Mfg. Co.....	South Water and Virginia.....	Pneumatic Malting Drums.....	1890
169 Gallum, A. P. & Son, "Empire Tannery"	975 N. Water St.....	Leather	1876
170 Gemeinhardt, John.....	936 Fourth St.....	Cooperage	1888
171 Gem Hammock and Fly Net Co.....	184 Hanover St.....	Hammocks and Fly Nets.....	1883
172 Gem Laundry.....	348 Milwaukee.....	Laundry	1891
173 Gem Milling Co.....	Knapp and North Ave.....	Milling	1881
174 Gender & Paeschke.....	15th St. and St. Paul Ave.....	Tinware Goods	1882
175 Generich, F. W. F.....	527 Nineteenth St.....	Marble Works.....	1891

176	Gerlach & Co., Wm.	Cor. 8th and Prairie	Maltsters	1848
177	Germania Publishing Co.	Cor. Wells and 3d St.	Publishing and Printing	1864
178	Gettelmann Brewing Co. A.	Wauwatosa	Bottlers of Beer	1891
179	Gettelmann Brewing Co. B.	Wauwatosa	Brewers and Maltsters	1854
180	Gibbs Electric Co.	Cor. Clinton and Oregon St.	Dynamos, Motors, etc.	1893
181	Gillett & Co.	Mich. and Milwaukee	Printing	1891
182	Globe Iron & Wire Works	292 S. Water St.	Iron Fences and Wire Goods	1895
183	Gollasch Co., The	116 Ogden Ave.	Mfg. Mustard	1895
184	Goll & Frank	598 Thirteenth St.	Overalls, Shirts and Pants	1892
185	Goures, Phillip	1819 Vliet St.	Cooperage	1888
186	Graf & Co., William	417 Seventh St.	Cigars	1859
187	Grant Marble Co.	57 Fourth St.	Marble and Granite	1871
188	Gross Bros. Soap Co., The	958 N. Water St.	Soap	1887
189	Gross & Sons, J.	1st Ave. and Sixth St. Bridge	Coal and Wood	1886
190	Great Western Knitting Works	310 Broadway	Worsted Hoods, Mittens, etc.	1881
191	Grede & Bro., George	248 Reed St.	Carriages and Wagons	1884
192	Grunslade Foundry Co.	Jackson St.	Architectural Iron	1880
193	Greve Lithographing Co.	Cor. Mich. and Milwaukee	Lithographing	1892
194	Graf, John	Greenfield and 17th Ave.	Soda Water and White Beer	1885
195	Gross Bros., The Fred C.	Muskego Ave.	Meat Dealers	1882
196	Gruhl Sash & Door Co.	142 Steward Ave.	Sash and Doors	1885
197	Gugler Lithographing Co.	Broadway and Ogden Ave.	Lithographing	1892
198	Gugler, Henry, Co.	218 Third St.	Publishers and Engravers	1870
199	Gunz & Co., R.	Muskego Ave.	Meat Dealers	1870
200	Haase Coal Co., Chas. J.	887 N. Water St.	Coal and Wood Yard	1877
201	Habheger, Theo.	568 Market St.	Wagons and Buggies	1876
202	Hack & Alten	534 Clinton	Steam Dyeing	1882
203	Hagemann's Laundry	306 Grove St.	Laundry	1893
204	Hannan, Wm.	752 Fourth St.	Iron Works	1890
205	Hannan & Son, A.	96 Sixth St.	Wagons	1887
206	Hanser, Johann, & Sons	1102 Twent-fourth St.	Soap	1892
207	Hansen's Empire Fur Factory	373 East Water St.	Fur Clothing	1862
208	Hansen Hop & Malt Co., The	S. Bay St.	Maltsters	1881
209	Hant, Kamp & Connan	Cor. Mich. & Milwaukee	Printing	1887
210	Harlass, Henry	413 Fourth St.	Brooms	1890
211	Hatch, J. B.	Near 6th St. Bridge and Canal	Shoddy from Woolen Rags	1883
212	Hays, George	228 Fourth St.	Extension Ladders, Butcher' Fix	1877
213	Hebenstret & Bartelt	1328 Vliet St.	Upholsterers	1894
214	Hecht & Zumach	283 W. Water St.	Putty, Mixed Paint	1875
215	Heidelberg Bros., H.	S. Milwaukee	Baskets	1888

MILWAUKEE—Continued.

Location.	Name of Firm.	Kind of Goods Made or Work Done.	Estab- lished.
216 Heinel & Son, Joseph.....	117 N. Water St.....	Carriages and Wagons.....	1867
217 Heinemann.....	Huron and Broadway.....	Fur Overcoats.....	1858
218 Heinemann & Co., M.....	427 Broadway.....	Artificial Flowers.....	1857
219 Heller & Mueller.....	475 Third St.....	Elevators.....	1895
220 Hendricks, H.....	North Ave. and 30th St.....	Cooperage.....	1890
221 Henes, Jr. & Co., L.....	Canal and Dock St.....	Coal and wood.....	1876
222 Hennicke Co., C.....	162 W. Water St.....	Wire goods, Vases, etc.....	1865
223 Henschel, C. B.....	321 Mineral St.....	Cigar boxes.....	1882
224 Hensel, Julius.....	729 Eleventh Ave.....	Cooperage.....	1893
225 Hermann, Albert.....	1707 Brown St.....	Pottery.....	1887
226 Herold, Der.....	431 Broadway.....	Printing and Publishing.....	1861
227 Heyer, George.....	397 Reed St.....	Upholstering.....	1889
228 Hilbert & Co., A. J.....	335 E. Water St.....	Chemicals and Perfumes.....	1887
229 Hilty Lumber Co., M.....	St. P. Ave. and Clermont St.....	Boxes and Planing.....	1886
230 Hirsch Bros.....	267 Reed St.....	Iron Foundry and Casting.....	1880
231 Hoffmann Co., John.....	501 River St.....	Sausage.....	1876
232 Hoffmann Mfg. Co., B.....	606 Cedar St.....	Iron Founders.....	1893
233 Hoffmann & Bauer.....	279 Lake St.....	Tin and Sheet Iron Works.....	1878
234 Hoffmann Billings Mfg. Co.....	96 Second St.....	Iron Work.....	1855
235 Hoffmann Billings Mfg. Co.....	178 Beecher St.....	Steam and Gas Engines, etc.....	1885
236 Hoffmann, Chas. H.....	719 Locust St.....	Brooms.....	1888
237 Holbrook, B. H.....	197 E. Water St.....	Tanners Supplies.....	1891
238 Hosch Bros., J.....	401 E. Water St.....	Furs.....	1880
239 Holtz, Bernhardt.....	1174 Eighth St.....	Brooms.....	1887
240 Hustig, E. L.....	Corner Fifth St. and Vliet.....	Soda Water and Weiss Beer.....	1877
241 Illinois Leather Co.....	Canal St.....	Plastering Hair.....	1886
242 Illinois Steel Co.....	Bay View, Seventeenth Ward.....	Steel and Iron Rails.....	1868
243 Instructive Toy Co.....	Thirty-ninth and Cherry St.....	Toys.....	1886
244 Iverson Co., J. C.....	425 E. Water St.....	Picture and Mirror Frames.....	1867
245 Jacobobson & Son, C. L.....	Layton Park.....	Hardware Specialties.....	1896
246 Jacobs & Son, B. H.....	Nineteenth St. and St. Paul Ave.....	Cooperage.....	1883
247 Jacobi, Fred.....	442 Pierce St.....	Refrigerators.....	1893
248 Jalass, Henry V.....	1018 St. Paul Ave.....	Packing boxes.....	1866

249	Jenkins, W. T.....	Mich. and Milwaukee.....	Bookbinders and Mfg. Blk. Books.....	1893
250	Jewett & Sherman Co.....	287 Broadway	Mfg. Baking Powder.....	1868
251	Jahnke, August.....	1174 Seventh St.....	Scroll Sawing and Wood Turning.....	1894
252	Johnson Bros. Factory.....	12 Erie St.....	Confectionery and Crackers.....	1847
253	Johnson Electric Service Co.....	120 Sycamore St.....	Heat Regulator.....	1884
254	Johnson Soap Co., B. J.....	Fourth and Fowler.....	Soap.....	1864
255	Jones Bros., A. P.....	618 Poplar St.....	Corks and Bungs.....	1885
256	Journal Co., The Daily.....	Corner Michigan and Milwaukee.....	Printing and Publishing	1883
257	Joys Bros. Co.....	205 E. Water St.....	Sail Makers.....	1843
258	Juneau Cycle Mfg. Co., The.....	Oregon St.....	Bicycles.....	1897
259	Kalamazoo Knitting Co.....	Fourth and Fowler St.....	Hosiery, Gloves, etc.....	1882
260	Kalt, Zimmer Mfg. Co.....	419 E. Water St.....	Overgaiters and Leggings.....	1890
261	Katzenstein Co., E.....	338 East Water St.....	Cothing.....	1897
262	Keller & Son, F. W.....	328 Oregon.....	Parlor Frames.....	1892
263	Kemp Smith Mach. Tool Co.....	Loomis and Woodward Ave.....	Machine Tools.....	1888
264	Keogh, Ed.....	386 Broadway	Job Printing	1867
265	Ketter, Fred.....	535 30th St.....	Cooperage.....	1894
266	Kieckhaefer Bros. Co.....	St. P. Ave bet. 9th and 10th.....	Tin Ware.....	1880
267	Kieckhaefer Elevator Co., A.....	Cor. 12th and St. Paul Ave.....	Passenger and Freight Elevators.....	1874
268	Kindling, Lewis.....	297 W. Water St.....	Cigars.....	1872
269	King, Fowie & McGee Co.....	242 Broadway	Printing and Engraving	1837
270	Kipp Bros.....	216 S. Water St.....	Mattresses and Spring Bed.....	1883
271	Kipp Co., B. A.....	North Milwaukee	Upholstered Furniture	1892
272	Klabinski Mineral Wool Co.....	Foot of Reed St.....	Mineral Wool.....	1896
273	Knauber Litho. Co., J.....	318 Cedar St.....	Lithographing	1867
274	Knibel, H. P.....	Reed and Park	Upholstering	1890
275	Kuehn Boot & Shoe Co.....	446 Clinton	Shoes.....	1892
276	Kopperud & Co., Andrew.....	231 Clinton St.....	Blacksmithing, Machinist.....	1894
277	Kraatz Estate, Chas.....	Wauwatosa.....	Brick.....	1881
278	Kraatz & Hograve.....	782 3rd St.....	Wood Carving.....	1886
279	Kranenberger, Ben.....	2130 Galena.....	Soda and Mineral Water.....	1895
280	Kraus, Merkel, Malting Co.....	So. Water St.....	Malsters.....	1881
281	Kraus Shoe Co.....	623 Cedar St.....	Shoes.....	1896
282	Krause Elevator "B".....	Foot 7th street.....	Grain Elevator.....	1861
283	Krause, F. & Co.....	Near St. Paul depot.....	Grain Elevator.....	1891
284	Krueger & Schoen.....	720 Vliet.....	Trucks.....	1894
285	Kump, Mrs.....	1324 Vliet	Bedding.....	1874
286	Kunth, Otto C.....	Lee and 3rd.....	Wagons.....	1877
287	Ladwig & Schrank Co.....	49 Biddle St.....	Flavoring Extracts.....	1876
288	Lake Cycle Mfg. Co.....	Cor. Erie and E. Water.....	Bicycles.....	1897

MILWAUKEE—Continued.

Name of Firm.	Location.	Kind of Goods Made or Work Done.	Estab-lished.
289 Lakeside Distilling Co.....	Carrolltown	Distilling Spirits	1893
290 Lamp & Miller Mfg. Co.....	511 Cedar St.....	Brass Goods	1869
291 Lange & Leihammer	Cor. 4th and Park	Office and Store Fixtures	1893
292 Langenberger, John	319 Wells St.....	Contractor	1864
293 Lange Mfg. Co., A.....	Vliet St.....	Bar and Store Fixtures	1897
294 Larson, Mons	603 Clinton St.....	Clothing	1885
295 Layton & Co.....	Muskego Ave.....	Meat packers	1842
296 League Cycle Co.....	15th St. & St. Paul Ave.	Bicycles	1896
297 Leidersdorf, B.....	So. Water and Reed	Tobacco	1858
298 Lemke, August	419 State St.....	Brooms	1860
299 Lindemann, A. J. & Hoverson Co.....	195 Hanover St.....	Stoves	1892
300 Lindemann & Sons, J. P.....	827 St. Paul Ave.....	Tinware	1878
301 Lintrick Mfg. Co.....	677 E. Water St.....	Sliding Door Hangers	1888
302 Liquid Car. Acid Mfg. Co.....	327 9th St.....	Liquid Car. Acid	1896
303 Loeffelholz, A. & Co.....	171 Clinton St.....	Brass Goods	1867
304 Loewenbach, A.....	215 2nd St.....	Job Printing	1880
305 Loewenbach & Son.....	314 E. Water St.....	Book Binders	1874
306 Logemann Bros.....	288 Oregon St.....	Machinists	1885
307 Lohr & Weifenbach.....	Cor. 18th and Forest Home.	Marble and Granite	1890
308 Lorenz Bros. Maccaroni Co.....	890 12th St.....	Maccaroni	1883
309 Luther & Giese.....	258 Lake	Tools and Machinery	1888
310 Mahler Albenberg Co.....	353 E. Water St.....	Pants, Overalls, Shirts	1888
311 Manville Covering Co.....	Cor. 3rd and Clybourn	Steam Pipe and Boiler Covering.....	1884
312 Marshall, Fred	1021 4th St.....	Brushes	1896
313 Martin, Geo., Leather Co.....	538 Commerce St.....	Leather	1865
314 Matthews Bros. Mfg. Co.....	61 4th St.....	Furniture and Int. Wood Work	1857
315 Mayer, F., Boot & Shoe Co.....	166 Walnut St.....	Boots and Shoes.....	1880
316 Mayer, F., Boot & Shoe Co., Factory 2.....	3rd St.....	Boots and Shoes.....	1897
317 Mayhew Mfg. Co.....	862 31st St.....	Chairs	1886
318 Mecklenburg, A. F., Lumber Co.....	30th St.....	Planing Mill	1897
319 Meinicke, A. & Sons.....	Mason and Front St.....	Bamboo Furniture and Willows.....	1858
320 Meisselbach, A. D., Co.....	North Milwaukee.....	Bicycles	1896

321	Meissenheimer Printing Co.	National Ave. and Clinton	Job Printing	1887
322	Mellen, Wm. & Son.	340 Barclay	Brass Founders	1870
323	Mercury Laundry	595 12th St.	Laundry	1893
324	Mertes & Miller Co.	Cor. Barclay and Lake Sts.	Boilers, Smoke Stacks, Tanks	1892
325	Meyer, Rotin, Printing Co.	Mich. and Milwaukee	Job Printing	1891
326	Milbrath, D. A.	313 Prairie St.	Carriages, Buggies, Wagons.	1885
327	Miller Co., H. C.	342 Broadway	Blank Books	1889
328	Miller, Fred., Brewing Co.	Wauwatosa	Brewer and Malster.	1858
329	Miller, Fred., Brewing Co.	Wauwatosa	Beer Bottling	1886
330	Milwaukee Bag Co.	Erie near Broadway	Paper and Cotton Jute Sacks.	1868
331	Milwaukee Bedding Co.	West Water St.	Bedding, Mattresses	1892
332	Milwaukee Blk. Book Mfg. Co.	218 3d St.	Blank Books, Book Binding	1891
333	Milwaukee Brick Co.	Wright and 33d St.	Brick	1895
334	Milwaukee Bridge & Iron Works	Cor. 17th and St. Paul Ave.	Arch. Iron Wks. and Bridge Contracts	1887
335	Milwaukee Brass & Copper Works	241 Greenfield Ave.	Brass and Copper Works	1887
336	Milwaukee Boiler Works	Oregon and Barclay Sts.	Boilers, Smoke Stacks, etc.	1862
337	Milwaukee Brass Mfg. Co.	190 East Water St.	Brass Castings, Brass Goods	1892
338	Milwaukee Brewing Co.	Clarence and 8th Ave.	Brewers and Bottling Beer	1894
339	Milwaukee Casket Co.	Cor. 15th and St. Paul Ave.	Coffins and Cloth Caskets	1875
340	Milwaukee Cement Co., Plant No. 1.	Town of Milwaukee	Cement	1875
341	Milwaukee Cement Co., Plant No. 2.	Town of Milwaukee	Cement	1887
342	Milwaukee Chair Works	30th and Center St.	Office Chairs	1877
343	Milwaukee Coffee Roasting Co.	Clinton St.	Roasting Coffee	1895
344	Milwaukee Dry Dock Co.	Foot of Washington St.	Ship Builders and Repairers	1866
345	Milwaukee Dry Dock Co.	Canal St.	Ship Builders and Repairers	1874
346	Milwaukee Electric Ry. & Light Co.	River St.	Electric Power for St. Ry.	1891
347	Milwaukee Electric Ry. & Light Co.	Broadway	Electric Power, Light and Heating	1891
348	Milwaukee Engineering Co.	19th St. and St. Paul Ave.	Bicycles	1896
349	Milwaukee File Works	31st and Cherry St.	Files and Rasps	1890
350	Milwaukee Foundry & Supply Co.	Cor. Ferry and Lake	Patterns and Foundry Supplies.	1894
351	Milwaukee Gas Light Co.	Jefferson and Menomonie.	Mfg. Coal and Water Gas	1852
352	Milwaukee Gas Stove Co.	15 Erie St.	Gas Stoves	1890
353	Milwaukee Harvester Co.	Park St. bet. 12th and 15th Aves.	Farm Mach. and Farm Impl.	1881
354	Milwaukee Hay Tool Co.	Layton Park	Hay Tools and Corn Huskers.	1888
355	Milwaukee Linseed Oil Co.	Barclay and Florida St.	Linseed Oil and Oil Cakes	1875
356	Milwaukee Lith. & Eng. Co., The.	217 3d St.	Lithographing	1859
357	Milwaukee Malt and Grain Co.	Florida St.	Malsters	1892
358	Milwaukee Mfg. Co.	North Milwaukee	Bicycles and Bicycle Specialties	1896
359	Milwaukee Monument Co.	Cor. 8th Ave. and Mitchell.	Monuments	1876
360	Milwaukee Mirror & Art Glass Works.	205 Broadway	Mirror Plates, etc.	1887

MILWAUKEE—Continued.

Name of Firm.	Location.	Kind of Goods Made or Work Done.	Estab-lished.
361 Milwaukee Net Co.....	324 Broadway.....	Fly Nets	1895
362 Milwaukee Novelty Dye Works	Cor. Mich. and Jefferson.....	Chemical Fur Cleaning and Dyeing	1896
363 Milwaukee Ornamental Carving Co.....	416 Fowler St.....	Stucco and Wood Carving	1887
364 Milwaukee Palming Co.....	425 Clybourn St.....	Leather Mittens	1888
365 Milwaukee Sleigh Co.....	1031 St. Paul Ave.....	Sleighs	1895
366 Milwaukee Steam Boiler Works.....	233 Oregon St.....	Steam Boilers and Smoke Stacks	1866
367 Milwaukee St. Ry. Co.....	Mitchell and Kinnikinnic Ave.....	Car Repair Shop	1895
368 Milwaukee St. Car. Repair Shops.....	Kinnikinnic Ave.....	Machine Shop and Car Repairs	1893
369 Milwaukee Suspender Co.....	327 Chestnut St.....	Suspenders	1891
370 Milwaukee Tack Co.....	Layton Park	Tacks, Shoe and Small Nails	1885
371 Milwaukee Telegraph, The	Cor. Mich. and Milwaukee.....	Publishing	1878
372 Milwaukee Wire & Iron Works.....	122 Sycamore St.....	Wire Goods	1890
373 Milwaukee Wood Mfg. Co.....	1513 St Paul Ave	Wagon and Sleigh Wood Material.....	1891
374 Milwaukee Worsted Cloth Co.....	32nd and Galena.....	Worsted Cloth	1891
375 Milwaukee Worsted Mills	Oakland Ave.....	Worsted and Woolen Goods.....	1888
376 Molitar, M.....	314 East Water St.....	Paper Boxes	1876
377 Moore Mfg Co.....	St. P. Ave. bet. 19th and 20th.....	Chain Hoists and General Machinery....	1896
378 Moore & Whitmore Co.....	S. Milwaukee	Shipping Lammers, Baskets	1870
379 Mueller, E. P.....	Commerce St.....	Drying Grains	1895
380 Mueller, John	13th and Fond du Lac Ave.....	Wagons	1877
381 Mueller, John L.....	414 4th St.....	Wagons	1862
382 Mueller & Sons Co., The.....	Canal St.....	Cigar and Packing Boxes	1872
383 Munkwitz, Edward H.....	197 East Water St.....	Tool and Pattern Maker	1890
384 My Laundry	2446 Vleit St.....	Laundry	1885
385 National Blower Works.....	Cor. 17th and St. Paul Ave.....	Heating, Ventilating and Dyeing Appar.....	1892
386 National Distilling Co.....	79 Buffalo	Rectifiers of Spirits and Yeast.....	1890
387 National Distilling Co.....	Menomonee Valley	Yeast and Distiller of Spirits.....	1883
388 National Elastic Nut & Bolt Works.....	Bay View S. of Rolling Mill.....	Nuts and Bolts.....	1894
389 National Envelope Co.....	South Water St.....	Envelopes	1893
390 National Knitting Co.....	889 Clinton St.....	Knit Goods	1885
391 National Sash & Door Co.....	7th and National Ave.....	Sash, Doors, Blinds and Mouldings.....	1885
392 National Straw Works.....	18th Ave. and Scott St.....	Ladies' Hats	1894

393	New Method Laundry	617 State St.....	Laundry	1893
394	News Publishing Co.....	199 West Water St.....	Publishing	1886
395	Niedecken & Co.....	334 East Water St.....	Blank Books	1847
396	Nordberg Mfg. Co.....	480 Virginia	Engines and Pumping Machinery.....	1884
397	North Side Brush Works	938 3d St.....	Brushes	1885
398	North Side Carriage Works	Cor. 4th and Sherman St.....	Wagons, Carriages and Repairing.....	1894
399	Northwestern Furniture Co.....	747 N. Water St.....	Office and Saloon Furniture	1881
400	Northwestern Laundry	1098 Richards St.....	Laundry	1892
401	Northwestern Malleable Iron Co.....	Park bet. 13th and 14th Aves.....	Malleable Iron Castings	1882
402	Northwestern Marine Elevator Co.....	S. Water and Florida St.....	Grain Storage	1868
403	Northwestern Steam Boiler Works	1028 St. Paul Ave.....	Boilers	1872
404	Northwestern Straw Works.....	Reed St.....	Ladies' and Children's Hats.....	1875
405	Nut & Washer Mfg. Co.....	Reynolds and Wilcox Sts.....	Nuts, Washers and Fellow Plates.....	1886
406	Obermann Brewing & Bottling Co.....	787 24½ St.....	White Beer and Soda Water.....	1896
407	Ogden, G. W., Co.....	172 3d St.....	Carriages and Buggies	1848
408	Ostuns Laundry	1840 Fond du Lac Ave.....	Laundry	1893
409	Obenberger, Joseph	125 Barclay St.....	Ship Smithing	1854
410	Pabst Brewing Co. (Bottling Dept.).....	9 Chestnut St.....	Bottling Beer	1881
411	Pabst Brewing Co.....	9 Chestnut St.....	Brewers and Malsters	1842
412	Pahl, E. R., & Co.....	Huron St.....	Bak. Powder and Malt Coffee	1894
413	Paine Bros. Co.....	Canal St.....	Drying Grain and Gen. Comm.....	1897
414	Paine Bros. Co. Elevator C., St. P. Ry.....	Foot of 6th St. and Menomonie River.....	Grain Elevator	1853
415	Palace Steam Laundry	Reed St.....	Laundry	1896
416	Pantke, E. R., Co.....	394 East Water St.....	Ladies' Fur Goods and Hats.....	1857
417	Patten, James E., Co.....	Cor. Lake and Barclay.....	White Lead, Colors and Putty.....	1855
418	Pawling & Harnischfeger.....	156 Clinton St.....	Machine, Tool and Pattern Shop.....	1884
419	Pederson, Chas.....	National Ave.....	Clothing	1895
420	Peerless Laundry	517 Grand Ave.....	Laundry	1893
421	Perfection Laundry	207 Broadway	Laundry	1896
422	Pernakasse, L.....	Reed St.....	Shirts	1896
423	Petermann, H.....	524 Chestnut	Brooms	1863
424	Pfannerstill & Hubauck.....	1606 St. Paul Ave.....	Machinist	1895
425	Pfeiffer, Chas.....	131 Ferry St.....	Machine Shop	1894
426	Pfengradt, Co., The	277 East Water St.....	Candy	1887
427	Pfister & Vogel Leather Co.....	Foot of 1st Ave.....	Leather	1848
428	Pfister & Vogel Leather Co.....	Vogels Island	Leather	1878
429	Pfister & Vogel Tanning Co., No. 1.....	Bay View	Leather	1889
430	Pfister & Vogel Tanning Co., No. 2.....	Bay View	Leather	1896
431	Phila. Reading, Coal & Iron Co., The.....	150 2d St.....	Miners and Shippers of Coal and Iron.....	1891
432	Phillips Furniture Co.....	Wauwatosa	Furniture and Office Fixtures	1890

MILWAUKEE—Continued.

Name of Firm.	Location.	Kind of Goods Made or Work Done.	Estab-lished
433 Phoenix Knitting Co.....	Broadway	Knit Goods	1885
434 Pietsch, Ferdinand	619 Cedar St.....	Brass Founders and Copper-smiths.....	1883
435 Pietsch, Otto	246 W. Water St.....	Chemical Dyeing Works	1855
436 Plankinton Packing Co.....	Muskego Ave	Pork and Beef Packers.....	1864
437 Pollitt Cycle Works	703 Winnebago	Bicycles	1896
438 Pollsworth Steam Laundry	1064 Teutonia St.....	Laundry	1897
439 Poppert, Geo., Mfg Co.....	North Milwaukee	Sash, Doors, Blinds, etc.....	1866
440 Prescott, Fred. M., Steam Pump Co.....	237 Oregon.....	Steam and Air Pumps.....	1895
441 Preuss, R. J., Co.....	670 Kinnickinnick Ave.....	Mattresses and Spring Beds.....	1896
442 Prinz & Rau Mfg. Co., The.....	659 East Water	Grain Cleaning Machinery.....	1888
443 Peetz & Hoffmann	51 3d St.....	Carriage and Sleigh Wood Work.....	1881
444 Quin Blank Book & Stationery Co.....	437 E. Water St.....	Blank Books	1875
445 Radke Bros. & Karsch.....	326 Broadway	Job Printing	1895
446 Raetz, Gustav	Madison St.....	Carriage Works and Repairing.....	1883
447 Rauschenberger, John	871 Teutonia.....	Ropes, Cordage and Hair Goods.....	1864
448 Razall, H. G.....	379 E. Water St.....	Blank Books	1878
449 Rediske Vinegar Co.....	S. of 8th Ave.....	Vinegar and Compressed Yeast.....	1892
450 Reineck, Wm.....	896 Holton St.....	Brooms	1878
451 Reinhart, F. C.....	Cudahy	Pork and Lard Bbls.....	1896
452 Reliance Laundry	213 Reed St.....	Laundry	1896
453 Reliance Mills	70 W. Water St.....	Milling	1868
454 Rice & Friedmann Co.....	Cor. 19th and Lloyd St.....	Clothing	1856
455 Rich, A. W., Shoe Co.....	Reed and S. Water St.....	Shoes	1867
456 Richter, F., & Son.....	882 6th St.....	Foundry and Iron Works.....	1856
457 Rickers & Co.....	52 3d St.....	Laundry and Toilet Soap.....	1872
458 Ricketson Mineral Paint Co.....	S. Milwaukee.....	Dry Mineral Paint.....	1891
459 Riemer, A. H., Co.....	225 Cedar St.....	Boots and Shoes.....	1891
460 Ritter, Louis	270 5th St.....	Saloon Furniture .....	.....
461 Riverside Printing Co., The.....	218 3d St.....	Printing, Lithographing, etc.....	1868
462 Rockwell Mfg. Co.....	Park, bet. 5th and 6th Aves.....	Sash, Doors, Blinds, etc.....	1871
463 Rohn & Meyer	448 E. Water St.....	Locksmiths	1860
464 Romadka Bros.....	223 3d St., 222 4th St.....	Trunks and Traveling Bags.....	1848

465	Rosenthal Corn Husking Mach. Co.	32d St. near Walnut St.	Corn Husking Machines.	1896
466	Roth Mfg. Co.	701 Cedar St.	Mustard, Pickles and Preserves.	1884
467	Royal Steam Laundry	396 Clinton St.	Laundry	1889
468	Rundle, Spence Mfg. Co.	62 2d St.	Brass and Iron Goods.	1880
469	Rundle, Spence Mig. Co.	Virginia and S. Water Sts.	Founders	1888
470	Salisbury Laundry	1606 Clybourn.	Laundry	1881
471	Sallentine, Christian	285 Virginia	Rectifiers of Spirits.	1879
472	Salzmann, L.	Winnebago St.	Shirts, Jackets, Overalls, etc.	1896
473	Sanderson, E., & Co.	Commerce St.	Milling	1880
474	Sanita Health Food Co.	254 Reed St.	Malt Coffee	1895
475	Saturday Star	138 Reed	Publishers	1889
476	Schellinger and Tank.	331 Chestnut St.	Cigars	1895
477	Schielke & Grohe	327 5th St.	Wagon Builders and Repairers.	1897
478	Schintz, Henry, Bottling Co.	607 Cherry St.	Mineral Water and Weiss Beer.	1888
479	Schipkanski, J.	South Milwaukee	Church Furniture	1893
480	Schultz, Jos., Brewing Co.	Walnut and 3d St.	Brewers and Maltsters.	1846
481	Schlitz, Jos., Brewing Co.	76 Barclay St.	Bottling	1886
482	Schlmeier, A. L., & Co.	110 Huron St.	Flavoring Extracts	1881
483	Schmidt, Wm. E.	6th St. near Cherry	Church Furniture	1896
484	Schmidt, Peter, & Co.	355 E. Water St.	Cut and Sawed Stone.	1889
485	Schmidt, F., & Son.	301 4th St.	Galvanized Iron Works.	1845
486	Schuelke, Wm., Ch. Organ Fact'y	Walnut bet. 22d and 23d Sts.	Church Organs	1889
487	Schnerd, A. L., Curled Hair Co.	Wauwatosa	Glue and Curled Hair.	1875
488	Schoenecker Boot & Shoe Co.	538 7th St.	Boots and Shoes.	1890
489	Schomann, H. F., Mfg. Co.	S. Water and Clinton St.	Repairing Machinery	1893
490	Schroeder, John, Lumber Co.	Foot of Walnut St.	Planing Mill	1887
491	Schwab & Sercomb.	278 Clinton St.	Furnaces and Iron Founders.	1877
492	Schwab Stamp & Seal Co.	392 E. Water St.	Stamped Brass and Metal Works.	1881
493	Schwalbach, Math	426 9th St.	Tower Clocks	1873
494	Schwartzburg, H. H.	North Ave. and 6th St.	Cigar Boxes	1889
495	Schultz, Erdmann.	Foot of Clinton St.	Planing Mill, etc.	1887
496	Schultz, A. George, & Co.	4th and Clybourn St.	Paper Boxes, Sample Cards	1878
497	Schuster, George J.	283 E. Water St.	Tobacconists	1878
498	Seaman, W. S., & Co.	216 E. Water St.	Parlor Furniture Frames	1879
499	Seaman Machine Co.	318 Milwaukee St.	Bicycles	1896
500	Seamless Structural Co.	Foot of Reed St.	Seamless Range Boilers etc.	1893
501	Seebote, Der.	96 Mason	Publishing and Printing.	1842
502	Semmann Mfg. Co.	1211 Lee St.	Harness, Gig and Express Saddles.	1889
503	Senderhauf, B., & Co.	1037 North Ave	Toilet and Laundry Soap.	1881
504	Sentinel Bindery, The.	Cor. Mich. and Milwaukee.	Book Bindery	1887

FACTORY INSPECTION.

MILWAUKEE—Continued.

Name of Firm.	Location.	Kind of Goods Made or Work Done.	Estab-lished.
505 Sentinel Co.	89 Mason St.	Publishers and Printers.	1837
506 Shadbolt & Boyd Iron Co.	129 W. Water St.	Jobbers in Iron and Steel.	1863
507 Shakman, L. A., Co.	349 E. Water St.	Clothing 1853	1853
508 Shaver, Jos., Granite & Marble Co.	7th St.	Monuments and Cut Stone 1874	1874
509 Shaws Steel Casting Works.	South Bay St.	Steel Castings 1895	1895
510 Sheriffs Mfg. Co.	124 Barclay St.	Propeller Wheels and Marine Eng. 1854	1854
511 Sidenberg & Hays.	376 Broadway 1881	Cloaks 1881	1881
512 Singer Mfg. Co.	236 W. Water St.	Repair Shop, Singer Sewing M. 1883	1883
513 Skobis Bros.	508 Commerce St.	Architectural Iron Works 1886	1886
514 Skubol & Schumer.	Beecher St.	Wagon and Carriage Repair 1882	1882
515 Smith, Angus.	S. Water and Lake St.	Grain Elevator 1866	1866
516 Smith, Wallace & Co.	82 W. Water St.	Saddlery Hd. Harness and Fly Nets. 1891	1891
517 Smith Mfg. Co.	1031 St. Paul Ave.	Bicycle Rims 1895	1895
518 Smith & Son.	Clinton and Park St.	Hardware Specialties 1878	1878
519 South Side Printing Co.	144 Reed St.	Publishers and Job Printing. 1879	1879
520 Specialty Mfg. Co.	Cor. Sycamore and W. Water.	Hardware Specialties 1897	1897
521 Sprinkmann, F.	131 Sycamore St.	Ainsworth Boiler and Pipe Covering. 1884	1884
522 Stamm, Nortmann, Duffie Co.	Layton Park 1888	Iron Founders 1888	1888
523 Standard Bedding Co.	215 Reed St.	Spring Beds and Mattresses 1896	1896
524 Standard Brick Co.	Clarmont Ave.	Brick 1882	1882
525 Standard Chemical Works.	620 Park 1896	Chemicals and Wool Fat 1896	1896
526 Standard Glove Works.	248 W. Water St.	Gloves and Mittens 1895	1895
527 Standard Laundry, The.	Ogden Ave. and N. Water St.	Laundry 1884	1884
528 Standard Mineral Wool Co.	South Milwaukee 1895	Mineral Wool 1895	1895
529 Standard Oil Co.	Walker St. and National Ave.	Dealers and Shippers of Kerosene. 1880	1880
530 Standard Printing Co.	Cor. Mich. and Milwaukee.	Job Printing 1860	1860
531 Strickel, Adrian 1866	Vogel's Island 1882	Harness Leather 1866	1866
532 Steffen, August.	493 Twenty-seventh St.	Cigars 1882	1882
533 Stehling & Chas. H.	508 Commerce 1883	Millwrights, Carpenters. 1883	1883
534 Stehling & Bloomer.	551 Tenth St.	Carriages and Wagons 1884	1884
535 Stillman, E. R.	Foot of Washington St.	Cooperage 1884	1884

536	Stillman, E. R.	Mineral and Barclay	Cooperage	1897
537	Stirn & Kosch Printing Co.	337 E. Water St.	Job Printing	1885
538	Stollenwerk & Weber Co.	S. Milwaukee	Planing Mill and Mfg. Beer Boxes	1894
539	Stolper, Chas., Cooperage Co.	661 Third and Fourth St.	Beer Barrels	1855
540	Straw & Ellsworth Mfg. Co.	354 Broadway	Fur Goods	1877
541	Struck, Fred.	547 River St.	Coal and Wood	1883
542	Suhm Leather Co.	766 Kinnikinnic Ave.	Tanners and Curriers	1882
543	Sullivan, H. J.	138 Seventh St.	Galvanized Iron Works	1885
544	Tainsh & Co.	114 Mason St.	Job Printing	1882
545	Teweles Grundman Co.	W. Water St.	Upholstering Furniture	1894
546	The Laundry	511 Vliet St.	Laundry	1889
547	Thiele, Henry.	Cor. Sixth and Chestnut	Hammocks	1865
548	Thomeler & Buess & Co.	321 Fourth St.	Carriages and Repairing	1893
549	Toepfer & Sons.	80 Menomonie	Kiln Trap Doors and Tanks	1853
550	Trenkamp, F., & Co.	209 Michigan St.	Soap	1848
551	Troestel, Albert, & Sons.	612 Commerce	Leather	1885
552	Troestel, Albert, & Sons.	893 N. Water St.	Leather	1865
553	Tuepke & Goetter	817 Teutonia St.	Wagon and General Blacksmith	1888
554	Uhlein Bros	Polk and Jefferson	Malsters	1880
555	Ulrich, B., & Son	152 Second St.	Coal and Wood	1880
556	Union Lithographing Co	144 Reed St.	Lithographing	1896
557	Union R'y Transportation Co.	Foot of Garfield Ave	Repair Cars	1894
558	Usinger, Fred	304 Third St.	Sausage	1882
559	Utility Mfg. Co.	183 Clinton St.	Tin Lined Shipping Packages	1895
560	Van Dyke Knitting Co.	225 S. Water St.	Knit Goods	1884
561	Van Horn, Dan	537 Seventeenth St.	Cut Glass Works	1887
562	Vass, Hermann	372 Milwaukee St.	Blank Books	1874
563	Vienna Malt Coffee Co.	1185 Teutonia	Malt Coffee	1893
564	Vilter Mfg. Co., The	680 Beecher St.	Brooms	1893
565	Vogt & Killian S. & D. Co.	576 Island Ave	Sash, Doors and Binds	1886
566	Voigt, Frank	1148 Eighth St.	Brooms	1893
567	Wadham Oil & Grease Co.	116 Fowler St.	Railroad, Mill and Miners Sup.	1875
568	Wagner, J. G.	514 Market St.	Architectural Iron Work	1869
569	Wagner & Habermann	1728 Lloyd St.	Wagons and Blacksmithing	1893
570	Wallmann	122 Sycamore St.	Wood Jackets and Shipping Cans	1893
571	Walsh, F. A., & Co.	Western City Limits and Vliet	Tinware	1891
572	Wandra, Theo	1026 Cold Spring Ave	Wood Carving	1894
573	Wauwatosa Carpet Cleaning Wks.	City Limits and Vliet St.	Cleaning Carpets	1893
574	Wauwatosa Steam Laundry	Wauwatosa	Laundry	1896
575	Weiner, E.	301 Seventh St.	Upholstered Goods	1883

MILWAUKEE—Continued.

Name of Firm.	Location.	Kind of Goods Made or Work Done.	Estab-lished.
576 Weins, A. R., Co.....	1227 Vliet St.....	Brushes	1886
577 Weins, Brandt, Co.....	225 Cedar St.....	Bicycle Handles	1897
578 Weissenberger, John	225 Cedar St.....	Soda and Mineral Water	1885
579 Weissleder, H.....	429 Sixth Ave.....	Copper Smith	1885
580 Weissner, John	616 Winnebago St.....	Cooperage	1859
581 Weiss & Schmidt Pottery Co.....	Thirty-second and Cherry St.....	Flower Pots.....	1891
582 Weigel	320 Broadway	Bedding	1865
583 Welcome Laundry	266 Grove St.....	Laundry	1895
584 Wenzel, J. H., & Co.....	912 Walnut St.....	Job and Book Printing	1878
585 Werner, Schenk, Co.....	189 Fifth St.....	Brass Founders	1893
586 Werrbach, Louis	89 Biddle St.....	Soda and Mineral Water, etc.....	1870
587 West Co., H. H.....	389 E. Water St.....	Blank Books and Bindery.....	1889
588 Western Coal Co.....	Foot of Washington	Hard and Soft Coal.....	1893
589 Western Gear Co.....	Cor. Mich. and Milwaukee	Tools and Machinery	1896
590 Western, Hd. Mfg. Co.....	66 Third St.....	Gas and Gasoline Stoves.....	1896
591 Western Leather Co.....	878 Marshall St.....	Miners' Soles from Scrap Leather.....	1886
592 Western Paper Co.....	263 W. Water St.....	Decorative Paper	1884
593 Westlake, De LaHunt & Smith Co.....	173 Second St.....	Job Printing	1885
594 West Side Mfg. Co.....	3016 Walnut St.....	Sash, Doors, Binds, etc.....	1892
595 Wetzel, August & Bros.....	618 E. Water St.....	Job Printing	1885
596 Witnall & Rademaker.....	Canal St. and Muskego Ave.....	Sewer Pipe	1895
597 Wilse, John	East of Orchard St.....	Cut and Sawed Stone	1873
598 Willer Mfg. Co.....	Fourth and Cedar St.....	Sash, Doors and Blinds	1868
599 Wilmans Bros	19 Erie St.....	Lithographers	1891
600 Windsor Mfg. Co.....	Clinton St.....	Lead Pipe and Sheet Lead.....	1897
601 Wisconsin Bridge & Iron Co.....	North Milwaukee	Structural Iron Work	1888
602 Wisconsin Furniture Co.....	North Milwaukee	Furniture	1894
603 Wisconsin Iron and Wire Wks.....	184 E. Water St.....	Wire and Iron Goods	1893
604 Wisconsin Malleable Iron Co.....	South Bay St.....	Castings	1879
605 Wisconsin Milling Co.....	Virginia St.....	Corn Mill	1893
606 Wisconsin Preserve Co.....	310 Galena St.....	Preserves	1885
607 Wollaeger Mfg. Co.....	636 N. Water St.....	Interior Woodwork, Etc.....	1884

608	Wood's Steam Laundry.....	73 Thirteenth St.....	Laundry	1894
609	Worackek, Albert.....	191 Galena St.....	Wagons and Blacksmithing	1893
610	Wrench, B. F.....	1198 Fifth St.....	Shoes and Slippers	1889
611	Yenowine News	Cor. Mich. and Milwaukee.....	Publishing	1885
612	Yewdale, J. H., & Sons.....	46 Oneida St.....	Printers and Binders	1865
613	Young Brewing Co.....	Cor. Fifth and Cherry.....	Brewers	1854
6--	Young Brewing Co.....	Cor. Third and Sherman.....	Malting	1883
		1602 St. Paul Ave.....	Mirror Art Glass.....	1895
615	Zeidler, Wm.....		Candy	1861
616	Zeigler, George, Co.....	233 E. Water St.....	Laundry	1893
617	Zimmermann, A.....	341 Sixteenth St.....	Leather	1857
618	Zohrlaut Leather Co., H.....	793 N. Water St.....	Soda Fountain Machine	1858
619	Zwietusch, Otto.....	Chestnut and Seventh St.....		
620				
621	Claus Handle Bar Mfg. Co.....	Cor. Erie and East Water Sts.....	Adjustable Handle Bars.....	1897
622	Cramer Engraving Co.....	McKeogh Bldg	Engraving	1897
623	Dawe Bros.....	McKeogh Bldg	Job Printing	1897
624	Denhardt, Hugo	1406 Chambers St.....	Fancy Knit Goods	1897
625	Hammersmith Eng. Co.....	McKeogh Bldg	Engraving	1898
626	Helling Enameling Co., The.....	245 Oregon St.....	Enameling Bicycle Parts.....	1894
627	Milwaukee Handle Bar Co.....	Cedar St. near Sixth.....	Handle Bars	1898
628	Milwaukee Steel Casting Co.....	Clinton and Greenfield Ave.....	Steel Castings	1897
629	National Papier Mache Works.....	501 Broadway	Italian Papier Mache	1896
630	Perfection Binding Co., The	West Water St.....	Book Bindery	1898
631	Peters, G. A.....	Cor. Erie and East Water St.....	Experimental Machinery	1898
632	Polworth, F., & Bros.....	Cuwper Block.....	Music Typographers	1898
633	Rilling, John E.....	225 Reed St.....	Upholstering	1897
634	Rosenbauer Schawalder Plating Co.....	196 East Water	Nickel Plating	1897
635	Saveland Bros	Twelfth and St. Paul Ave.....	Bicycle Rims	1897
636	Siebert, Frank	722 Cedar St.....	Carpenter Contractor	1897
637	Stirn & Kasch	Cuwper Block.....	Engraving, Printing, Etc.....	1898

92

FACTORY INSPECTION.

Name of Firm.	Location.	Kind of Goods Made of Work Done.	Estab- lished.
638 Albany Linen Mill.....	Albany, Green Co.....	Mfg. Linen Toweling.....	1897
639 Albany Milling & Elec. Light Co.....	Albany, Green Co.....	Flour and Feed.....	1868
640 Albany Tannery.....	Albany, Green Co.....	Tanners.....	1888
641 Gapen, George W.....	Albany, Green Co.....	Mfg. Turkish Towels.....	1897
642 Ahnapee Furniture Co.....	Ahnapee, Kewaunee Co.....	Writing Desks, Furniture.....	1890
643 Ahnapee Record, The.....	Ahnapee, Kewaunee Co.....	Publishing and Printing.....	1896
644 Ahnapee Veneer Seating Co.....	Ahnapee, Kewaunee Co.....	All kinds of Veneer Seating.....	1892
645 Gablonsky Co.....	Ahnapee, Kewaunee Co.....	Cheese Boxes, Shingles, etc.....	.....
646 Kelsey, M. A.....	Ahnapee, Kewaunee Co.....	Mfg. Fly Nets.....	1891
647 Wodsedalek, Jos.....	Ahnapee, Kewaunee Co.....	Machinist, Foundry, Elec. L.....	1895
648 Alma Brewing Co.....	Alma, Buffalo Co.....	Brewers.....	1890
649 Alma Milling Co.....	Alma, Buffalo Co.....	Flour and Feed.....	1888
650 Buffalo Co. Journal.....	Alma, Buffalo Co.....	Publishers and Printers.....	1861
651 Buffalo Co. Republikaner Pub. Co.....	Alma, Buffalo Co.....	Publishers and Printers.....	1861
652 Amberg Granite Co.....	Amberg, Marinette Co.....	Quarrying and Mfg. Granite.....	1889
653 Bettinger, F. C.....	Amberg, Marinette Co.....	Lumber and Shingles.....	.....
654 Pike River Granite Co.....	Amberg, Marinette Co.....	Quarrying and Mfg. Granite.....	1896
655 Amery Elevator.....	Amery, Polk Co.....	Grain Elevator.....	1893
656 Amery Free Press.....	Amery, Polk Co.....	Publishers and Printers.....	1891
657 Amery Lumber Co.....	Amery, Polk Co.....	Lumber, Lath, Shingles.....	1888
658 Hockerson, Chas. W.....	Amery, Polk Co.....	Cigar Factory, No. 80.....	1895
659 Manohan, Thomas.....	Aniwa, Shawano Co.....	Lumber and Planing Mill.....	1887
660 Antigo Brewing Co.....	Antigo, Langlade Co.....	Brewers.....	1893
661 Antigo Edison Elec. Light Co.....	Antigo, Langlade Co.....	Electric Light for City.....	1888
662 Antigo Hub Mfg. Co.....	Antigo, Langlade Co.....	Hubs and Hoops.....	1892
663 Antigo Mfg. Co.....	Antigo, Langlade Co.....	Mfg. Stoves.....	1890
664 Antigo Novelty Mfg. Co.....	Antigo, Langlade Co.....	Ironing, Wash Boards, Etc.....	1892
665 Antigo Roller Mills.....	Antigo, Langlade Co.....	Mfg. Flour.....	1891
666 Antigo Screen Door Co.....	Antigo, Langlade Co.....	Mfg. Lumber.....	1892
667 Antigo Screen Door Co.....	Antigo, Langlade Co.....	Mfg. Screen Doors.....	1890
668 Antigo Steam Laundry.....	Antigo, Langlade Co.....	Laundry.....	1894
669 Crocker Chair Co.....	Antigo, Langlade Co.....	Chair Stock.....	1887

670 Crocker Chair Co.....	Antigo, Langlade Co.....	Hardwood Lumber.....	1880
671 Freyberger, L.....	Antigo, Langlade Co.....	Wagons and Sleighs.....	1888
672 Frost Veneer Seating Co.....	Antigo, Langlade Co.....	Veneer for all Kinds Seating.....	1891
673 Johns, W. B.....	Antigo, Langlade Co.....	Mill Machinery and Mill Supplies.....	1884
674 Kellogg, T. D., Lumber Mfg. Co.....	Antigo, Langlade Co.....	Lumber.....	1886
675 Kellogg, T. D., Lumber Mfg. Co.....	Antigo, Langlade Co.....	Planing Mill.....	1886
676 Millond Publishing Co.....	Antigo, Langlade Co.....	Pub. Weekly News Item.....	1885
677 Mitchell Bros.....	Antigo, Langlade Co.....	Lumber.....	1895
678 Ross Lumber Co.....	Arbor Vitae, Vilas Co.....	Lumber, Lath and Shingles.....	1893
679 Arcadia Electric Light Co.....	Arcadia, Trempealeau Co.....	Electric Lighting.....	1897
680 Arcadian, The.....	Arcadia, Trempealeau Co.....	Publishers and Printers.....	1894
681 Arcadian Milling Co.....	Arcadia, Trempealeau Co.....	Flour and Feed, Grain Elevator.....	1890
682 Leader, The.....	Arcadia, Trempealeau Co.....	Publishers and Printers.....	1893
683 Ashland Bottling Works.....	Ashland, Ashland Co.....	Soft Drinks.....	1892
684 Ashland Brewing Co.....	Ashland, Ashland Co.....	Beer.....	1887
685 Ashland Cigar & Tobacco Co.....	Ashland, Ashland Co.....	Cigars.....	1875
686 Ashland Daily Press.....	Ashland, Ashland Co.....	Publishing and Printing.....	1897
687 Ashland Iron & Steel Co.....	Ashland, Ashland Co.....	Pig Iron.....	1888
688 Ashland Lighting & St. Ry. Co.....	Ashland, Ashland Co.....	Light and St. Railway.....	1896
689 Ashland Lumber Co.....	Ashland, Ashland Co.....	Lumber.....	1893
690 Ashland Steam Laundry.....	Ashland, Ashland Co.....	Laundry.....	1892
691 Ashland Sulpite Fibre Co.....	Ashland, Ashland Co.....	Sulphite Fibre.....	1893
692 Ashland Water Co.....	Ashland, Ashland Co.....	Supplying Water.....	1884
693 Betzer, Fred.....	Ashland, Ashland Co.....	Cigars.....	1884
694 Chequamegon Ice Co.....	Ashland, Ashland Co.....	Ice.....	.....
695 C. & N. W. Repair Shops.....	Ashland, Ashland Co.....	Repair Shop.....	1887
696 Durfee, W. R.....	Ashland, Ashland Co.....	Lumber.....	.....
697 Kennedy, D. A.....	Ashland, Ashland Co.....	Lumber.....	1890
698 Keystone Lumber Co.....	Ashland, Ashland Co.....	Lumber and Lath.....	1889
699 Kruschke, H., & Co.....	Ashland, Ashland Co.....	Office Furniture.....	1888
700 Mowatt, D. W.....	Ashland, Ashland Co.....	Lumber.....	1885
701 Ohio Coal Co.....	Ashland, Ashland Co.....	Dealers in Coal.....	1887
702 Parish Mfg. Co.....	Ashland, Ashland Co.....	Mill Machinery.....	1885
703 Pennsylvania & Ohio Fuel Co.....	Ashland, Ashland Co.....	Coal Dealers.....	1887
704 Pope Lumber Co., Planing Mill.....	Ashland, Ashland Co.....	Planing Lumber.....	1898
705 Pope Lumber Saw Mill.....	Ashland, Ashland Co.....	Lumber, Lath and Shingles.....	1898
706 Scott & Taylor.....	Ashland, Ashland Co.....	Sash, Doors and Blinds.....	1887
707 Standard Steam Laundry.....	Ashland, Ashland Co.....	Laundry.....	1897
708 Wisconsin Central Ry. Shops.....	Ashland, Ashland Co.....	Repair Shops.....	.....

Name of Firm.	Location.	Kind of Goods Made of Work Done.	Estab-lished.
709 Appleton Calcic Carbide Co.....	Appleton	Mfr. Calcic Carbide.....	1896
710 Appleton Chair Company	Appleton	Mfrs. Chairs and Rockers.....	1890
711 Appleton Electric Laundry	Appleton	Laundry	1897
712 Appleton Elec. L. & P. Co.....	Appleton	Light and Street Railway.....	1895
713 Appleton E. L. & P. Co., No. 2.....	Appleton	Light and Street Railway	1891
714 Appleton Evening Crescent.....	Appleton	Printing and Publishing.....	1853
715 Appleton Hay Tool Co.....	Appleton	Mfr. Hay Tools and Hardware.....	1893
716 Appleton Knitting Co.....	Appleton	Mfr. Knit Goods.....	1892
717 Appleton Machine Co.....	Appleton	Mfr. Pulp and Paper Mill Mach.....	1883
718 Appleton Pickle & Pre. Co.....	Appleton Junction	Sauerkraut, Pickles, etc.....	1893
719 Appleton Printing & Paper Co.....	Appleton	Printing, Ruling and Binding.....	1896
720 Appleton Steam Laundry	Appleton	Laundry	1895
721 Appleton Volksfreund, German.....	Appleton	Publishing and Printing.....	1870
722 Appleton Water Works.....	Appleton	Water for City	1882
723 Appleton Wecker, German.....	Appleton	Publishing and Printing.....	1881
724 Appleton Screen Plate Co.....	Appleton	Mfr. Screen Plate	1893
725 Appleton Shirt & Pants Co.....	Appleton	Mfr. Shirts and Pants.....	1891
726 Appleton Wire Works	Appleton	Mfr. Brass Wire Cloth for Paper Mill..	1896
727 Appleton Woolen Mill.....	Appleton	Mfr. Yarn and Paper Felts.....	1881
728 Atlas Paper Co.....	Appleton	Print and Manilla Colored Paper.....	1878
729 Atlas Paper Co., Pulp Mills.....	Appleton	Ground Wood Pulp.....	1887
730 Eagle Mfg. Co.....	Appleton	Hay Tools and Feed Cutters.....	1883
731 Fairbanks, J. S.....	Appleton	Machinist	1842
732 Fox River Paper Co.....	Appleton	Book and Writing Paper.....	1887
733 Kimberly & Clark Co.....	Appleton	Printing and Book Paper.....	1883
734 Lake Superior Knit Works.....	Appleton	Knit Goods	1897
735 Lyons, B.....	Appleton	Mfrs. Cigars	1872
736 Marston & Beveridge	Appleton	Mrs. Hubs and Spokes	1833
737 Mauser & Renner Co.....	Appleton	Planing Mill and Interior Wood Work..	1881
738 The Mfr. Investment Co.....	Appleton	Mfr. Sulphite Pulp	1891
739 Muench Brewing Co.....	Appleton	Brewers	1874
740 Patten Paper Co., The.....	Appleton	Mfr. Print and Book Paper.....	1833
741 Patten Paper Co., The.....	Appleton	Mfr. Wood Pulp.....	1834
742 Post Publishing Co., The.....	Appleton	Publishing and Printing	1834
743 River Side Fiber Co., The.....	Appleton	Mfr. Bleached and Unbleached Sulphites	1893

744	L. C. Schmidt.....	Appleton	Mfr. Cigars and Tobacco.....	1872
745	A. Spenig.....	Appleton	Custom Woolens and Dyeing.....	1883
746	Star Brewery.....	Appleton	Brewers and Malsters.....	1880
747	John Stier.....	Appleton	Mfr. Cigars.....	1882
748	The Tetulah Paper Co.....	Appleton	Mfr. Print, Book and Ground Paper.....	1890
749	Union Toy & Furniture Co., The.....	Appleton	Mfr. Children's Wagons and Sleighs....	1881
750	Valley Iron Wk. Mfg. Co., The.....	Appleton	Mfr. Engines and General Mill Works..	1882
751	Webster & Son, W. M.....	Appleton	Planing Mill and Job Work Paper Mill..	1888
752	Western Screen Plate Works.....	Appleton	Mfr. Screen Plate.....	1879
753	Wicken Co., The.....	Appleton	Mfr. Office and Saloon Furniture.....	1891
754	Willy & Company.....	Appleton	Mfr. Flour.....	1881
755	Wisconsin Malt and Grain.....	Appleton	Malsters.....	1892
756	Fountain Lbr. Co., J.....	Appleton	Lumber.....	1898
757	Athens Mfg. Co.....	Athens, Marathon Co.....	Hoops and Saw Mill.....	1891
758	Braun, M., & Sons.....	Athens, Marathon Co.....	Hardwood Lumber and Staves.....	1891
759	Rietbrock & Halsey.....	Athens, Marathon Co.....	Lumber.....	...
760	Hussa Brewing Co.....	Bangor, La Crosse Co.....	Brewers.....	1858
761	Baraboo News Pub. Co.....	Baraboo, Sauk So.....	Publishers.....	1883
762	Bartz, August.....	Baraboo, Sauk So.....	Mfrs. of Cigars.....	1892
763	C. & N. W. R'y.....	Baraboo, Sauk So.....	Car Repairing.....	1871
764	Gem Steam Laundry.....	Baraboo, Sauk So.....	Laundry.....	1887
765	Island Woolen Co.....	Baraboo, Sauk So.....	Mfrs. Woolen Cloth.....	1865
766	McArthur & Son.....	Baraboo, Sauk So.....	Mfrs. Turkish Towels.....	1892
767	Sauk Co. Democrat.....	Baraboo, Sauk So.....	Printers and Publishers.....	1879
768	Barron Roller Mill.....	Barron, Barron Co.....	Flour and Feed.....	1884
769	Barron Stave & Heading Co.....	Barron, Barron Co.....	Mfrs. Heading.....	1891
770	Barron Woolen Mills.....	Barron, Barron Co.....	Genuine All Wool Flannels.....	1884
771	Holliday, R.....	Barron, Barron Co.....	Lumber, Lath and Shingles.....	1894
772	Bayfield Co. Press, The.....	Bayfield, Bayfield Co.....	Publishers and Printers.....	1857
773	Rooth, A., Packing Co.....	Bayfield, Bayfield Co.....	Oysters, Fish and Canned Goods.....	...
774	Pike, The R. D., Lumber Co.....	Bayfield, Bayfield Co.....	Lumber.....	1850
775	Wachmuth & Son.....	Bayfield, Bayfield Co.....	Mfrs. Dressed Lumber.....	1894
776	Eggert & Rassler.....	Rear Creek, Waupaca Co.....	Lumber, Planing Mill.....	1882
777	Murphy, P. D.....	Rear Creek, Waupaca Co.....	Feed Mill, Elevator.....	1891
778	Tyrell, George, & Son.....	Rear Creek, Waupaca Co.....	Shingle Mill, Planing, etc.....	1881
779	Brault, O.....	Beaver Creek, Marinette Co.....	Lumber and Shingles.....	1897
780	Beaver Dam Cotton Mills.....	Beaver Dam.....	Mfrs. Cotton Sheeting.....	1882

Name of Firm.	Location.	Kind of Goods Made or Work Done.	Estab-lished.
781 Beaver Dam Malleable Iron Works.....	Beaver Dam	Mfg. Malleable Iron.....	1892
782 Beaver Dam Woolen Mills.....	Beaver Dam	Mfg. Woolen Cloth.....	1866
783 Beaver Dam Worsted Co.....	Beaver Dam	Mfg. Woolen Cloths.....	1853
784 Empire Roller Mills.....	Beaver Dam	Mfg. Flour and Feed.....	1847
785 Rowel, J. S., & Sons.....	Beaver Dam	Seeders, Drills and Fanning Mills.....	1855
786 Brimer, W. D.....	Beldenville, Pierce Co.....	Mfrs. Staves and Heading.....	1885
787 Kupske, Ferdinand.....	Belle Plain, Shawano Co.....	Mfg. Lumber	1894
788 Lang, Fred.....	Belle Plain, Shawano Co.....	Lumber and Hard Wood.....	1884
789 Webster, F. C., & Son.....	Belle Plain, Shawano Co.....	Mfg. Lumber	1891
790 Barrett Mfg. Co.....	Beloit, Rock Co.....	Building and Sheath Board Paper.....	1880
791 Beloit Carriage Works.....	Beloit, Rock Co.....	Sleighs, Carriages and Wagons.....	1871
792 Beloit Daily & Weekly News, The.....	Beloit, Rock Co.....	Publishing and Printing.....	1879
793 Beloit Electric Light Co.....	Beloit, Rock Co.....	Electric Light for City.....	1887
794 Beloit Free Press, The.....	Beloit, Rock Co.....	Publishing and Printing.....	1848
795 Beloit Iron Works, The.....	Beloit, Rock Co.....	Mfg. Paper Machinery.....	1857
796 Beloit Steam Laundry, The.....	Beloit, Rock Co.....	Laundry	1893
797 Berlin Machine Works, The.....	Beloit, Rock Co.....	Woodworking Machinery.....	1877
798 Besley, Chas. H., & Co.....	Beloit, Rock Co.....	Gardner's Disc, Grinders, etc.....	1888
799 Blodgett Milling Co.....	Beloit, Rock Co.....	Mfg. Brick, Wheat and Rye Flour.....	1849
800 Crohen, P. H.....	Beloit, Rock Co.....	Mfg. Cigars.....	1878
801 Cunningham Bros.....	Beloit, Rock Co.....	Sash, Doors, Blinds, etc.....	1873
802 Dowd, R. J.....	Beloit, Rock Co.....	Mfg. Machine Knives.....	1877
803 Dulhanty, F.....	Beloit, Rock Co.....	Mfg. Cigars	1893
804 Eureka Steam Laundry.....	Beloit, Rock Co.....	Laundry	1886
805 Excelsior Steam Laundry.....	Beloit, Rock Co.....	Laundry	1895
806 Fairbanks, Morse & Co.....	Beloit, Rock Co.....	Steam Engines, Pumps, etc.....	1885
807 Ferguson Bros.....	Beloit, Rock Co.....	Buggies and Sleighs.....	1892
808 Foster, John, Co.....	Beloit, Rock Co.....	Mfg. Ladies' Shoes.....	1870
809 Frantz, Chas.....	Beloit, Rock Co.....	Sheet Metal Works.....	1892
810 Frazer, H., & Co.....	Beloit, Rock Co.....	Machinist	1896
811 Gastan, M. B., & Son.....	Beloit, Rock Co.....	Platforms, Stock Scales, etc.....	1844
812 Gesley Mfg. Co.....	Beloit, Rock Co.....	Cultivators, Sulky Plows, etc.....	1890
813 Johnson, O. J.....	Beloit, Rock Co.....	Wagons, Carriages, etc.....	1875

814	Luson & Westrip.....	Beloit, Rock Co.....	Machinist	1890
815	Leonard, H. J., Mfg. Co.....	Beloit, Rock Co.....	Gloves and Mittens.....	1865
816	McErroy & Co., J. C.....	Beloit, Rock Co.....	Machinist and Founders.....	1884
817	Novelty Carriage Works.....	Beloit, Rock Co.....	Wagons and Carriages.....	1874
818	Oliver, Chas.....	Beloit, Rock Co.....	Mfg. Cigars	1884
819	Purvis, Thomas.....	Beloit, Rock Co.....	Mfg. Cigars	1882
820	Rock River Paper Mill, The.....	Beloit, Rock Co.....	Building and Wrapper Paper.....	1859
821	Rosenblatt, H., & Sons.....	Beloit, Rock Co.....	Shirts, Pants and Overalls.....	1879
822	Taylor Electric Light & Power Co.....	Beloit, Rock Co.....	Electric Light and Power.....	1881
823	Thompson, J., & Sons Mfg. Co.....	Beloit, Rock Co.....	Ole Olson Sulkeys, Plows, etc.....	1861
824	Weed Lumber Co.....	Benoit, Bayfield Co.....	Mfrs. Lumber	1894
825	Advance Mch. Works.....	Berlin	Agricultural Implements	1894
826	Berlin Elec. Light Co.....	Berlin	Light	1891
827	Berlin Journal	Berlin	Printing and Publishing	1870
828	Berlin Canning & Pickle Co.....	Berlin	Pickling Cucumbers	1892
829	Johnson, Niels.....	Berlin	Machinist	1870
830	Berlin Glove & Mitten Co.....	Berlin	Gloves and Mittens.....	1892
831	Berlin & Montello Granite Co.....	Berlin	Building, Paving Stone, etc.....	1880
832	Berlin Whip Co.....	Berlin	Whips, Gloves and Mittens.....	1881
833	Hollis Stedman & Sons.....	Berlin	General Produce	1872
834	Luther Co., Henry.....	Berlin	Mfg. Brooms	1892
835	Russell Glove Co., The.....	Berlin	Gloves and Mittens.....	1897
836	Safford, M.....	Berlin	Produce Dealer	1868
837	Stillman, Wright & Co.....	Berlin	Flour and Feed	1894
838	Wright, Chas. H.....	Berlin	Mfg. Pickles	1895
839	Talcott Estate, F. B.....	Berlin	Gloves and Mittens.....	1895
840	Model Steam Laundry.....	Berlin	Laundry	1897
841	Morris, Chas. S.....	Berlin	Brick	1874
842	Murphy, J. E.....	Berlin	Butter Tubs, Cheese Boxes.....	1889
843	Styer, C. W.....	Berlin	Cigars	1883
844	McCanna & Frazer Co.....	Big Bend, Waukesha Co.....	Mfg. Cutter	1891
845	McKenzie, Clarence.....	Big Bend, Waukesha Co.....	Hardwood Lumber and F. Mill.....	1855
846	Waukesha Hygeia Spring Co.....	Big Bend, Waukesha Co.....	Spring Water to Chicago.....	1890
847	Raepke & Meisner.....	Birnamwood	Lumber, Shingles and Ties.....	1889
848	Stacy & Toll.....	Birnamwood	Mfg. Lumber	1886
849	Vandoeren & Andrews.....	Birnamwood	Mfg. Lumber	1888
850	Vandoeren & Andrews.....	Birnamwood	Excelsior, Staves and Planing.....	1892
851	Hager, Chas. J.....	Black Creek	Cheese Boxes, Cisterns, etc.....	1892

Name of Firm.	Location.	Kind of Goods Made or Work Done.	Estab-lished.
852 Christenson, Ole.....	Bloomer, Chippewa Co.....	Planing Lumber	1890
853 Rasperson & Co.....	Bloomer, Chippewa Co.....	Feed and Grain Elevator.....	1891
854 Johnson, James, & Co.....	Boardman, St. Croix Co.....	Flour and Feed.....	1896
855 Behnke, Albert	Brillion, Calumet Co.....	Mfg. Lumber	1877
856 Brillion Furniture Co.....	Brillion, Calumet Co.....	Mfg. Tables	1889
857 Brillion Iron Works.....	Brillion, Calumet Co.....	Machinist and Casting.....	1893
858 Brillion Lumber & Mfg. Co.....	Brillion, Calumet Co.....	Planing Mill and Gen. Contract.....	1890
859 Brillion Roller Mills.....	Brillion, Calumet Co.....	Flour and Feed.....	1889
860 Brillion Wagon Factory.....	Brillion, Calumet Co.....	Wagons, Sleighs, Carriages.....	1887
861 Anderson, Lukas & Co.....	Brodhead, Green Co.....	Electric Light for City	1887
862 Barr, O. J.....	Brodhead, Green Co.....	Mfg. Wagons	1882
863 Bartlett & Sons.....	Brodhead, Green Co.....	Carriages, Wagons and Sleighs.....	1872
864 Brodhead Foundry and Mach. Shop.....	Brodhead, Green Co.....	Founders and Machinists	1868
865 Brodhead Independent	Brodhead, Green Co.....	Publishing and Printing	1861
866 Brodhead Steam Laundry.....	Brodhead, Green Co.....	Laundry	1897
867 Laube & Durner	Brodhead, Green Co.....	Wagons, Carriages and Repairs	1866
868 Pierce, George M.....	Brodhead, Green Co.....	Agricultural Implements	1873
869 Register, The	Brodhead, Green Co.....	Publishing and Printing	1883
870 Jenson, Ole.....	Brookville, St. Croix Co.....	Lumber and Shingles.....	1866
871 Burkhardt, C.....	Burkhardt, St. Croix Co.....	Hard Wheat Flour, etc.....	1888
872 Burlington Blanket Co.....	Burlington, Racine Co.....	Mfg. Horse Blankets.....	1891
873 Burlington Brewery	Burlington, Racine Co.....	Brewers	1887
874 Burlington Brick & Tile Co.....	Burlington, Racine Co.....	Brick and Tile.....	1885
875 Burlington Machine Shop.....	Burlington, Racine Co.....	Foundry and Machinist.....	1878
876 Burlington Steam Laundry	Burlington, Racine Co.....	Laundry	1897
877 Empire Steam Laundry	Burlington, Racine Co.....	Laundry	1892
878 Holmes, Ben.....	Burlington, Racine Co.....	Mfg. Cigars	1883
879 Kline, F. G., Co.....	Burlington, Racine Co.....	Vichy Spring, and Bottling Works.....	1857
880 McKenna, Fraser Co.....	Burlington, Racine Co.....	Mfg. Butter	1884
881 Pieters, W. J.....	Burlington, Racine Co.....	Wagons and Repairing	1872
882 Smithers & Harris Co.....	Burlington, Racine Co.....	Mfg. Ironing Tables, Clothes Racks, etc.....	1893

883	Voorhees, E. S.	Burlington, Racine Co.	Tubs, Tanks and Sorghum	1866
884	Zwiebel, A., & Sons	Burlington, Racine Co.	Clothes Racks, Ironing Boards	1857
885	Hoskins, L. S.	Barnum	Lumber	1886
886	Bell Center Stave Co.	Bell Center	Staves and Heading	1890
887	Tate, W. W., & Co.	Bell Center	Lumber	1880
888	Ableiter, M.	Boscobel	Wagons and Sleighs	1866
889	Boscobel Brewery	Boscobel	Beer	1895
890	Boscobel Roller Mills	Boscobel	Flour and Feed	1897
891	Botten, L. P.	Boscobel	Machinists	1897
892	Dial-Enterprise, The	Boscobel	Publishing and Printing	1887
893	Nelson, Wm.	Boscobel	Wool and Yarn	1897
894	Ruka Bro. Mfg. Co. Lmt.	Boscobel	Brick	1879
895	Ruka Bro. Mfg. Co., Plant A.	Boscobel	Wagons and sleighs	1879
896	Ruka Bro. Mfg. Co., Plant B.	Boscobel	Lumber	1883
897	Rustic Novelty Works	Boscobel	Rustic Chairs	1891
898	Birkholdz, E. A.	Cameron Jct. Barron Co.	Mfrs. Feed	1892
899	Cashton Milling Co.	Cashton, Monroe Co.	Mfg. Flour and Feed	1891
900	Mitbv, P. E.	Cashton, Monroe Co.	Grain Elevator	1897
901	Cato Creamery	Cato, Manitowoc Co.	Mfg. Butter	1891
902	Killen, W. N.	Cato, Manitowoc Co.	Mfg. Cheese Boxes	1877
900	Isstos, Frank	Cecil Shawano Co.	Lumber, Posts, R. R. Ties, etc.	1887
904	Cedarburg Brewery	Cedarburg, Ozaukee Co.	Brewers	1872
905	Cedarburg Furniture Co.	Cedarburg, Ozaukee Co.	Tables and Office Furniture	1893
906	Cedarburg Wire Nails and Screw Co.	Cedarburg, Ozaukee Co.	Mfg. Wire Nails	1890
907	Cedarburg Woolen Mills, The	Cedarburg, Ozaukee Co.	Blankets and Worsted Yarn	1864
908	Columbia Mills	Cedarburg, Ozaukee Co.	Flour and Feed	1850
909	Excelsior Shoe & Slipper Co.	Cedarburg, Ozaukee Co.	Mfg. Shoes and Slippers	1890
910	Hilgen Mfg. Co., The	Cedarburg, Ozaukee Co.	Sash, Doors and Blinds	1872
911	Schroeder Roller Mills	Cedarburg, Ozaukee Co.	Mfg. Flour	1855
912	Zichane, Frank, Co.	Cedarburg, Ozaukee Co.	Zichane Coffee Essence	1890
913	Knapp, Stout & Co.	Cedar Falls, Dunn Co.	Lumber, Lath and Shingles	1883
914	Gearhart, A. A.	Chelsea, Taylor Co.	Lumber, Lath and Shingles	1889
915	Dorschel Schultz Co.	Chilton, Calumet Co.	Sash, Doors and Blinds	1883
916	Duemke & Raasch	Chilton, Calumet Co.	Flour and Feed	1879
917	Gieraw & Hoch	Chilton, Calumet Co.	Brewers and Malsters	1869
918	Hugo, C. M.	Chilton, Calumet Co.	Mfg. Cigars	1880
919	Unfon Roller Mill	Chilton, Calumet Co.	Mfg. Flour	1875

Name of Firm.	Location.	Kind of Goods Made or Work Done.	Estab- lished.
920 Vohldrick, A. H.....	Chilton, Calumet Co.....	Founders and Repair Machine	1877
921 Champion Bros	Chippewa, Bloomer Township.....	Mfg. Lumber	1895
922 Chippewa Falls Gas & Water Wks. Co.....	Chippewa Falls, Chippewa Co.....	Supplying Water and Gas.....	.....
923 Chippewa Lumber & Boom Co.....	Chippewa Falls, Chippewa Co.....	Lumber	1879
924 Consolidated Milling Elevator & Power Co.	Chippewa Falls, Chippewa Co.....	Flour and Feed	1872
925 Leinenkugel, Jacob	Chippewa Falls, Chippewa Co.....	Mfrs. Beer	1867
926 South Side Mfg. Co.....	Chippewa Falls, Chippewa Co.....	Window Frames and Mouldings.....	1892
927 Stanley, F. G., & C. A.....	Chippewa Falls, Chippewa Co.....	Sash, Doors and Machine Shop.....	1888
928 Courier, The	Clear Lake, Polk Co.....	Publishers and Printers.....	1897
929 Bennett, G. P.....	Clintonville, Waupaca Co.....	Mfg. Broom Handles	1883
930 Carter, E.....	Clintonville, Waupaca Co.....	Mfg. Shingles	1894
931 Clintonville Steam Laundry	Clintonville, Waupaca Co.....	Laundry	1896
932 Clintonville Tribune	Clintonville, Waupaca Co.....	Publishing and Printing	1882
933 Larson & Shaver.....	Clintonville, Waupaca Co.....	Flour and Feed	1892
934 Rohrer, L. O.....	Clintonville, Waupaca Co.....	Lumber, Grist Mill.....	1887
935 Rohrer, David	Clintonville, Waupaca Co.....	Sash, Doors, and Planing Mill.....	1887
936 Wall, Spalding & Wall.....	Clintonville, Waupaca Co.....	Saw Cedar Post and Blocks	1886
937 Zachow & Bessardich	Clintonville, Waupaca Co.....	General Machinists	1891
938 Bolles, E. E., & Co.....	Coleman, Marinette Co.....	Mfg. Lumber	1889
939 Kruth, J. H., & Co.....	Columbus	Beer and Malt.....	1858
940 Combined Locks Paper Co.....	Combined Locks, Outagamie Co.....	Wood Pulp and Paper.....	1891
941 Beaver Dam Lumber Co.....	Cumberland, Barron Co.....	Lumber, Lath, Shingles.....	1880
942 Cumberland Milling Co.....	Cumberland, Barron Co.....	Mfrs. Flour and Feed.....	1890
943 Keyes & Cole.....	Cumberland, Barron Co.....	Mfrs. of Heading.....	1896
944 Colby Lumber Co.....	Colby, Marathon Co.....	Lumber .....	.....
945 Colby Mfg. Co.....	Colby, Marathon Co.....	Tables and Saloon fixtures	1895
946 Peterson, N. P., Mfg. Co.....	Colby, Marathon Co.....	Wagons	1896
947 Sigelke & Petty Co.....	Dancy, Portage Co.....	Lumber and Lath	1879

948	Darlington Democrat Pub. Co.....	Darlington, Lafayette Co.....	Publishing and Printing	1865
949	Darlington Electric Light & Water Co.....	Darlington, Lafayette Co.....	Light and Water for City	1896
950	Darlington Republican	Darlington, Lafayette Co.....	Publishing and Printing	1860
951	McCarville & Gunner	Darlington, Lafayette Co.....	Feed Mill, Flour	1896
952	Robinson, Mrs. J. G.....	Darlington, Lafayette Co.....	Grist Mill	1883
953	Roslip & Mika.....	Darlington, Lafayette Co.....	Mfg. Cigars.....	1892
954	Buckley Bros	Delavan, Walworth Co.....	Laundry	1896
955	Delavan Light & Fuel Co.....	Delavan, Walworth Co.....	Electric Light	1893
956	Delavan Mill Co., The	Delavan, Walworth Co.....	Mfg. Flour and Feed	1849
957	Delavan Republican, The	Delavan, Walworth Co.....	Publishing and Printing	1863
958	Reader, J. B.....	Delavan, Walworth Co.....	Mfg. Tanks and Wind Mills	1885
959	Reed Ice Cream Co., The	Delavan, Walworth Co.....	Mfg. Ice Cream.....	1893
960	Van Velzer, W. C.....	Delavan, Walworth Co.....	Mfg. Cigars	1897
961	Dousman Milling Co., J. P.....	De Pere, Brown Co.....	Flour and Feed	1853
962	Dunham & Smith	De Pere, Brown Co.....	Feed Mill	1891
963	Johann, J. W., & Son.....	De Pere, Brown Co.....	Sash, Doors and Blinds.....	1874
964	Lawton, C. A.....	De Pere, Brown Co.....	Foundry and Machine Shop	1878
965	Shattuck & Babcock Co.....	De Pere, Brown Co.....	Mfg. Paper	1892
966	Downing Mfg. Co.....	Downing, Dunn Co.....	Lumber, Lath and Shingles.....	1885
967	Knapp, Stout & Co.....	Downsville, Dunn Co.....	Mfgs. Lumber	1865
968	Rust Owen Lumber Co.....	Drummond, Bayfield Co.....	Lumber, Lath and Shingles.....	1882
969	Duck Creek Stone Quarry.....	Duck Creek, Brown Co.....	Quarrying Bldg. and Bridge Stone.....	1873
970	C. & N. W. R. R. Co. Stone Quarry.....	Duck Creek, Brown Co.....	Quarrying Bldg. and Bridge Stone.....	1876
971	Crevcoura Bros.....	Duck Creek, Brown Co.....	Mfg. Brick	1880
972	Girard Lumber Co.....	Dunbar, Marinette Co.....	Mfgs. and Dealers.....	1888
973	Dundas Butter & Cheese Co.....	Dundas, Calumet Co.....	Butter and Cheese.....	1894
974	Wolffinger Cheese Box Factory.....	Dundas, Calumet Co.....	Cheese Boxes, Butter Pails	1880
975	Ellingson & Bros.....	Dorchester, Clark Co.....	Lumber, Lath and Shingles.....	1897
976	Bonell, William, & Son.....	Eau Claire	Mfrs. and Dealers Carriages, etc.....	1868
977	Chippewa Valley Elec. Ry. Co.....	Eau Claire	Street Railway	1896
978	City Steam Laundry	Eau Claire	Laundry	1893
979	Cutter, A. A.....	Eau Claire	Driving Shoes and Sporting Goods.....	1883
980	Daily Telegram, The.....	Eau Claire	Printers and Publishers	1894
981	Dells Lumber Co.....	Eau Claire	Lumber	1881
982	Dells Paper & Pulp Co.....	Eau Claire	Mfrs. Paper and Pulp	1894
983	Derge, J.....	Eau Claire	Cigars	1875

Name of Firm.	Location.	Kind of Goods Made or Work Done.	Estab- lished.
984 Drummond Bros.....	Eau Claire	Beef and Pork Packers.....	1872
985 Eau Claire Boiler Works.....	Eau Claire	Boilers, Tanks, Heaters, etc.....	1889
986 Eagle Brewing Co.....	Eau Claire	Brewers	1891
987 Eau Claire Book & Sta. Co.....	Eau Claire	Job Printers and Mfrs. Stationery.....	1885
988 Eau Claire Box Shook & Lum. Co.....	Eau Claire	Box-Shooks and Lumber.....	1894
989 Eau Claire Elec. Light & Power Co.....	Eau Claire	Mfrs. Water and Light.....	1890
990 Eau Claire Gas Light Co.....	Eau Claire	Mfrs. of Gas	1877
991 Eau Claire Linen Co.....	Eau Claire	Linen Crash and Turkish Towels.....	1888
992 Empire Lumber Co.....	Eau Claire	Lumber Mfrs.	1857
993 Fish, E. M., & Co.....	Eau Claire	Mfrs. Sash and Doors.....	1867
994 Half Moon Lake Shingle & Fuel Co.....	Eau Claire	Shingles and Wood.....	1893
995 Herold, Der	Eau Claire	Publishers and Printers.....	1890
996 Kurven Dress Stay Co.....	Eau Claire	Mfrs. Dress Stays.....	1894
997 Lake Side Elevator Co.....	Eau Claire	Elevator for Grain and Mfrs. Feed.....	1871
998 Leader Co., The.....	Eau Claire	Publishers and Printers.....	1881
999 Linderman Box & Veneer Co., The.....	Eau Claire	Boxes, Box Shooks and Veneer.....	1896
1000 Lister, William.....	Eau Claire	Mfrs. of Stone Work.....	1894
1001 Madison Street Mfg. Co.....	Eau Claire	Contractors and Builders.....	1885
1002 McDonough Mfg. Co.....	Eau Claire	Saw Mill Machinery.....	1889
1003 National Electric Light Co.....	Eau Claire	Dynamos, Motors, etc.....	1888
1004 Northwestern Lumber Co.....	Eau Claire	Lumber, Lath and Shingles.....	1865
1005 Pioneer Furniture Co.....	Eau Claire	Furniture	1888
1006 Phoenix Mfg. Co.....	Eau Claire	Woodwork, Foundry, etc.....	1875
1007 Reform, The	Eau Claire	Printers and Publishers.....	1894
1008 Shaw, N., & Co.....	Eau Claire	Saw Mill Machinery.....	1859
1009 Shaw, Daniel, Lumber Co.....	Eau Claire	Lumber	1857
1010 Shaw, Daniel, Lumber Co.....	Eau Claire	Lumber, Lath and Shingles.....	1857
1011 Valley Lumber Co.....	Eau Claire	Lumber, Lath and Shingles.....	1857
1012 Walter, J., & Co.....	Eau Claire	Brewers	1890
1013 West & Watersdorf.....	Eau Claire	Cigars	1888
1014 Wisconsin Refrigerator Co.....	Eau Claire	Refrigerators	1889

1015	Edgar Pressed Brick Co.....	Edgar, Marathon Co.....	Mfg. Brick	1891
1016	Guaw Lumber Co.....	Edgar, Marathon Co.....	Mfg. Lumber	1890
1017	Hoensch, Ernst	Edgar, Marathon Co.....	Mfg. Lumber	1895
1018	Menasha Woodenware Co.....	Edgar, Marathon Co.....	Staves and Heading	1893
1019	Leary, Jos. J.....	Edgerton, Rock Co.....	Mfg. Cigars	1895
1020	Parr, Royal	Edgerton, Rock Co.....	Mfg. Brick	1879
1021	Pauline Pottery Co.....	Edgerton, Rock Co.....	Pottery, Electric Cups, Filters.....	1888
1022	Wisconsin Tobacco Reporter.....	Edgerton, Rock Co.....	Publishing and Printing.....	1864
1023	Ingersoll Land Co.....	Eland Jct., Shawano Co.....	Planing Mill	1887
1024	Ingersoll Land Co.....	Eland Jct., Shawano Co.....	Mfg. Lumber	1890
1025	Rideant, W. K.....	Eland Jct., Shawano Co.....	Mfg. Lumber	1882
1026	Elkhorn Dairy Co.....	Elkhorn, Walworth Co.....	Mfg. Butter	1875
1027	Elkhorn Independent, The.....	Elkhorn, Walworth Co.....	Publishing, Printing	1851
1028	Elkhorn Tank & Woodenware Co.....	Elkhorn, Walworth Co.....	Mfg. Tanks	1897
1029	Kachel West Co.....	Elkhorn, Walworth Co.....	Mfg. Cheese Boxes.....	1888
1030	Opitz, Fred	Elkhorn, Walworth Co.....	Mfg. Sleighs and Wagons.....	1854
1031	Sprague Bros.	Elkhorn, Walworth Co.....	Brick, Tiles and Paving Brick.....	1886
1032	Williams Zurevel Co.....	Elkhorn, Walworth Co.....	Machine Work	1897
1033	Zech, H., & Co.....	Ellis Jct., Marinette Co.....	Lumber, Lath and Shingles.....	1896
1034	Nelson & Devoe.....	Elmhurst, Shawano Co.....	Lumber and Staves.....	1882
1035	Wunderlick, George	Elmhurst, Shawano Co.....	Lumber	1882
1036	Elmwood Mfg. Co.....	Elmwood Pierce Co.....	Mfg. Basswood Panels.....	1896
1037	Kelley & Haagensen.....	Elmwood Pierce Co.....	Mfrs. Lumber	1897
1038	Ellsworth Mfg. Co.....	Ellsworth, Pierce Co.....	Baskets and Excelsior	1891
1039	Decker & Smith.....	Embarrass, Waupaca Co.....	Lumber, Lath and Shingles.....	1889
1040	Delany, George	Embarrass, Waupaca Co.....	Carding Wool	1894
1041	Baker Mfg. Co.....	Evansville, Rock Co.....	Pumps, Windmills, etc.....	1873
1042	Morgan, J. W., & Co.....	Evansville, Rock Co.....	Carryalls, Phaetons, etc.....	1887
1043	Gerry Lumber Co.....	Eagle River, Vilas Co.....	Lumber, Lath and Shingles.....	....
1044	Neville, W. D.....	Eagle, Vilas Co.....	Shingles	1895
1045	Jones, G. N., Lumber Co.....	Elcho, Langlade Co.....	Lumber, Lath and Shingles.....	1894
1046	Forster, N. C., Lumber Co., The.....	Fairchild, Clark Co.....	Lumber, Flour and Feed.....	1876

Name of Firm.	Location.	Kinds of Goods Made or Work Done.	Established.
1047 Hammond Bros.....	Farm Hill, Pierce Co.....	Hardwood Lumber	1885
1048 Fenwood Lumber Co.....	Fenwood, Marathon Co.....	Mfg. Lumber	1892
1049 Fenwood Lumber Co.....	Fenwood, Marathon Co.....	Planing Mill	1895
1050 Allen & Treleven.....	Fond du Lac.....	Merchant Miller	1890
1051 Bates, C. E.....	Fond du Lac.....	Mfr. of Boxes.....	1883
1052 Bowen Mfg. Co., The.....	Fond du Lac.....	Refrigerators and Furniture.....	1893
1053 Bechaud Brewing Co.....	Fond du Lac.....	Brewers	1872
1054 Burrows, George S., & Co.....	Fond du Lac.....	Carriage Tops and Trimmings.....	1879
1055 Commonwealth Printing Co.....	Fond du Lac.....	Publishers	1885
1056 Cooper Blanket Co.....	Fond du Lac.....	Mfrs. Horse Blankets.....	1893
1057 Eureka Steam Laundry.....	Fond du Lac.....	Laundry	1885
1058 Fond du Lac Electric Co.....	Fond du Lac.....	Electric Light and Power.....	1896
1059 Fond du Lac Implement Co.....	Fond du Lac.....	Agricultural Implements.....	1894
1060 Fond du Lac Malt & Grain Co.....	Fond du Lac.....	Mfrs. of Malt.....	1890
1061 Fond du Lac Shirt Co.....	Fond du Lac.....	Mfrs. of Shirts.....	1896
1062 Fond du Lac Steam Laundry.....	Fond du Lac.....	Laundry	1881
1063 Fond du Lac Table Mfg. Co.....	Fond du Lac.....	Mfrs. of Tables.....	1894
1064 Furstnow, A. H., & Co.....	Fond du Lac.....	Mfrs. of Jewelry.....	1888
1065 Gas Light Co. of Fond du Lac.....	Fond du Lac.....	Mfrs. of Gas.....	1863
1066 Giddings & Lewis Mfg. Co.....	Fond du Lac.....	Saw Mill Machinery	1869
1067 Globe Cigar Mfg. Co., The.....	Fond du Lac.....	Cigars	1882
1068 Gurney Refrigerator Co.....	Fond du Lac.....	Refrigerators	1890
1069 Haber, P. B., Printing House.....	Fond du Lac.....	Book, Job and Show Printing.....	1879
1070 Harrison Postal Bag Co.....	Fond du Lac.....	P. O. Bag Racks, Mail Car, etc.....	1879
1071 Huber & Fuhrman Drug Mills.....	Fond du Lac.....	Botanic Drug Mill.....	1864
1072 Koehn, Jos.....	Fond du Lac.....	Mfrs. Paper Boxes.....	1892
1073 Lange, L. A.....	Fond du Lac.....	Publishers and Printers.....	1856
1074 Moletor, M. & M.....	Fond du Lac.....	Carriages and Wagons.....	1876
1075 Moore & Galloway Lumber Co., Ltd.....	Fond du Lac.....	Lumber, Sash and Doors	1864
1076 Nordwestlicher Courier	Fond du Lac.....	Newspaper and Job Printing	1871
1077 Rueping, Fred, Leather Co.....	Fond du Lac.....	Mfrs. of Leather.....	1864
1078 Steenberge, O. C., Co.....	Fond du Lac.....	Sash, Doors and Blinds.....	1871

1079	Strascino Piano Co.....	Fond du Lac.....	Instruments and Pianos.....	1895
1080	Sweet, B. F. & H. L. Co.....	Fond du Lac.....	Wagons, Sleds, etc.....	1855
1081	U. S. Mfg. Co.....	Fond du Lac.....	U. S. Cyclometers and Odometers.....	1895
1082	Wafer Yeast Co.....	Fond du Lac.....	Yeast.....	1895
1083	Wild, B., Factory.....	Fond du Lac.....	Crackers and Confectionery.....	1859
1084	Winnebago Furniture Co.....	Fond du Lac.....	Furniture.....	1890
1085	Cornish, Curtis & Green Mfg. Co.....	Ft. Atkinson, Jefferson Co.....	Dairy Implements.....	1865
1086	Ft. Atkinson Brick Mfg. Co.....	Ft. Atkinson, Jefferson Co.....	Brick and Tile.....	1891
1087	Fort Steam Laundry, The.....	Ft. Atkinson, Jefferson Co.....	Laundry.....	1894
1088	Hoard's Creamery.....	Ft. Atkinson, Jefferson Co.....	Mfg. Butter.....	1886
1089	Northwestern Mfg. Co.....	Ft. Atkinson, Jefferson Co.....	Chairs, Wagons and Sleighs.....	1866
1090	Pounder, George H.....	Ft. Atkinson, Jefferson Co.....	Mfg. Brooms and Harrows.....	1873
1091	Wilcox & Richards Co.....	Ft. Atkinson, Jefferson Co.....	Grain Elevators, Feed Mills.....	1882
1092	Wis. Butter Tub Co.....	Ft. Atkinson, Jefferson Co.....	Mfg. Butter Tubs.....	1894
1093	Zanger & Hoffmann.....	Ft. Atkinson, Jefferson Co.....	Feed Mill and Grain Elevator.....	1888
1094	Foss, Martin L.....	Foss Spur, Lincoln Co.....	Mfg. Lumber.....	1891
1095	Alert Mill, The.....	Fountain City, Buffalo Co.....	Flour and Feed.....	1895
1096	Bohri, F., & Son.....	Fountain City, Buffalo Co.....	Elevator.....	1895
1097	Dressendoerfer, Andrew.....	Fountain City, Buffalo Co.....	Wagons and Plows.....	1887
1098	Fountain City Brewing Co.....	Fountain City, Buffalo Co.....	Mfrs. of Beer.....	1887
1099	Roettiger, H., & F.....	Fountain City, Buffalo Co.....	Contractors and Builders.....	1883
1100	Schneider, George.....	Fountain City, Buffalo Co.....	Mfrs. Cigars.....	1889
1101	Alard & McQuire.....	Green Bay.....	Vinegar, Pickles, etc.....	1893
1102	Allouez Natural Mineral Water.....	Green Bay.....	Soda and Seltzer Water, Ginger Ale.....	1886
1103	Annenn, J. P., Candy Co.....	Green Bay.....	Mfg. Candy.....	1886
1104	Britton, D. W.....	Green Bay.....	Cooperage.....	1850
1105	Burns, D. M., & Son.....	Green Bay.....	Mfg. Boilers.....	1865
1106	Cainte, A. J.....	Green Bay.....	Mfg. Dry Mineral Paint.....	1895
1107	Cargill, N. W., Co.....	Green Bay.....	Grain Elevator.....	1865
1108	Carlton & Fowles.....	Green Bay.....	Boat Builders and Repairers.....	1875
1109	C. M. & St. P. Shops and Round House.....	Green Bay.....	Locomotive and Car Repairers.....	1878
1110	Diamond Match Co.....	Green Bay.....	Mfg. Lumber.....	1897
1111	Diamond Match Co.....	Green Bay.....	Planing Mill.....	1897
1112	Johannes Bros. Spice & Coffee Mills.....	Green Bay.....	Coffee and Spices.....	1884
1113	Dieckmann & Schober Mfg. Co.....	Green Bay.....	Sash, Doors, Mouldings, etc.....	1866
1114	Dobry, J. W.....	Green Bay.....	Mfg. Lumber.....	1893
1115	Eberling, J. H.....	Green Bay.....	Mfg. Flour.....	1877

Name of Firm.	Location.	Kind of Goods Made or Work Done.	Estab- lished.
1116 Fiedler & Collins.....	Green Bay	Printers	1894
1117 Finegan, Wm., Brick Mfg. Co.....	Green Bay	Mfg. Brick	1892
1118 Fox River Electric St. Ry Co.....	Green Bay	Power for St. Ry.....	1893
1119 Fox River Electric St. Ry.....	Green Bay	Electric Lights	1895
1120 Green Bay Advocate Co.....	Green Bay	Publishing, Printing, etc.....	1846
1121 Green Bay Carriage Co.....	Green Bay	Buggies, Carriages	1890
1122 Green Bay Gazette, The.....	Green Bay	Publishing and Printing	1866
1123 G. B. & Ft. H. Gas & Electric Light Co..	Green Bay	Gas and Electric Light	1886
1124 Green Bay Planing Mill Co.....	Green Bay	Building Material	1890
1125 Green Bay Steam Laundry.....	Green Bay	Laundry	1892
1126 Green Bay Water Works.....	Green Bay	Water for City	1886
1127 G. B. & W. R. R'y Shops & Rd. House....	Green Bay	Cars and Locomotives	1872
1128 Hagemeister Brewing Co.....	Green Bay	Brewers and Malsters	1866
1129 Handler, J. J.....	Green Bay	Soda, Seltzer, Mineral Waters.....	1876
1130 Henderson, Robt., Co.....	Green Bay	Grinding Paint	1883
1131 Hermann, John, & Son.....	Green Bay	Book Bindery and Ruling.....	1842
1132 Hess, Geo. B., Co.....	Green Bay	Flour	1893
1133 Hoberg Co., The.....	Green Bay	Toilet Paper	1893
1134 Hocker, Jos.	Green Bay	Brick	1888
1135 Hocker, John	Green Bay	Brick and Tile	1859
1136 Hohgrave Brewing Co.....	Green Bay	Brewer	1877
1137 Howard Foundry & Machine Shop.....	Green Bay	Founders and Machine Shop	1868
1138 Hurlburt, F.	Green Bay	Coal, Wood and Oil	1873
1139 Industrial Iron Works.....	Green Bay	Machines	1897
1140 Kemnitz Furniture Co., The.....	Green Bay	Furniture	1883
1141 Larson, William	Green Bay	Pickles, Canning Vegetables	1893
1142 McCormick & Flatley.....	Green Bay	Grain, Flour, Coal	1885
1143 McDonald, H.....	Green Bay	Lumber, Lath, Shingles	1881
1144 McDonald, H.	Green Bay	Planing Mill	1881
1145 Milwaukee Sanding Mach. Co.....	Green Bay	Sanding Machines	1895
1146 Mueller Bros. & Co.....	Green Bay	Sash, Doors, Blinds, etc	1890
1147 Murphy Lumber Co.....	Green Bay	Lumber, Shingles, Lath.....	1886
1148 Murphy Lumber Co.....	Green Bay	Boxes	1894

1149	O'Leary Bros.....	Green Bay	Boilers	1878
1150	Rohr, Henry, Sons.....	Green Bay	Brewers and Malsters	1866
1151	Root, E.....	Green Bay	Book Bindery and Job Printing	1880
1152	Rothe, Joseph F.....	Green Bay	Foundry	1893
1153	Schmidt, J. P. C.....	Green Bay	Ginger Ale, Soda, Seltzer, etc	1884
1154	Schunck, Jr., Chas.....	Green Bay	Cigars	1845
1155	Schwartz, C. S., & Son.....	Green Bay	Machine Shop and Foundry	1888
1156	Stumbel Brick Co.....	Green Bay	Brick	1868
1157	Weise Furniture Co.....	Green Bay	Furniture	1892
1158	Wing, Sam	Green Bay	Laundry	1870
1159	Wirtz & Schmidt.....	Green Bay	Cigars	1892
1160	Van Dyke, O., Brewing Co.....	Green Bay	Brewers and Malsters	1872
1161	Montreal R. Lumber Co.....	Gile, Iron Co.....	Lumber, Lath, Shingles	1888
1162	Jenson, Elias, Saw Mill	Gilman P. O., Pierce Co.....	Hardwood Lumber	1895
1163	Mathison Bros	Gilman P. O., Pierce Co.....	Hardwood Lumber	1893
1164	Switzer, W. F.....	Glen Flora, Chippewa Co.....	Lumber, Lath, Shingles	1893
1165	Glenwood Mfg. Co.....	Glenwood, St. Croix Co.....	Lumber, Wagon and Barrel Stock	1885
1166	Tribune, The.....	Glenwood, St. Croix Co.....	Publishers and Printers	1888
1167	Grafton Mills	Grafton, Ozaukee Co.....	Flour and Feed	1895
1168	Grafton Tannery Co.....	Grafton, Ozaukee Co.....	Glove Leather	1895
1169	Johnson, Martin	Gratiot, Green Co.....	Feed Mill	1885
1170	Baily, B. L.....	Greenwood, Clark Co.....	Lumber	1895
1171	Coerper & Leach	Hartford, Washington Co.....	Sheep and Deer Skin Tanners	1895
1172	Hartford Plow Works	Hartford, Washington Co.....	Horse Powers and Plows	1881
1173	Kendall & Co., J. O.....	Hartford, Washington Co.....	Mfg. Flour	1872
1174	Landenstein, A. G.....	Hartford, Washington Co.....	Malsters	1892
1175	Nehrbass Casket Co.....	Hartford, Washington Co.....	Mfg. Caskets	1879
1176	Partz Bros.....	Hartford, Washington Co.....	Malsters	1892
1177	Partz & Werner	Hartford, Washington Co.....	Brewers	1874
1178	Uber Bros. & Co.....	Hartford, Washington Co.....	Brick, Sheepskin Leather	1882
1179	Hatch, E. D.....	Hatchville, Dunn Co.....	Mfrs. of Lumber	1891
1180	Cross Badger Co.....	Hawthorne, Douglas Co.....	Mfg. Lumber	1890
1181	Hayward Water Works	Hayward, Sawyer Co.....	City Water	1890
1182	Northern Grain Co.....	Hayward, Sawyer Co.....	Flour and Feed	1887
1183	North Wisconsin Lumber Co.....	Hayward, Sawyer Co.....	Lumber, Lath and Shingles	1880

Name of Firm.	Location.	Kind of Goods Made or Work Done.	Estab- lished.
1184 Yawkey Lumber Co.....	Hazelnurst	Lumber, Lath, Shingles, etc.....	1889
1185 East Side Lumber Co.....	Houlton, St. Croix Co.....	Lumber, Lath and Shingles	1888
1186 Van Braunt & Wilkins Mfg. Co.....	Horicon	Farm Implements	1869
1187 Muskeg Lumber Co.....	Hornersville, Bayfield Co.....	Lumber	1896
1188 Buchmanz Bros	Hortonville, Outagamie Co.....	Flour and Feed	1896
1189 Diestler Co., Limited, The.....	Hortonville, Outagamie Co.....	Building Material	1889
1190 Diestler Co., Limited, The.....	Hortonville, Outagamie Co.....	Mfg. Lumber	1870
1191 Fountain Roller Mills.....	Hortonville, Outagamie Co.....	Flour and Grist Mill.....	1844
1192 Parcher & Smith	Hatley	Mfg. Lumber	1881
1193 Babcock & Smith.....	Houghton, Bayfield Co.....	Stone Quarry	1885
1194 Prentice Brown Stone Co., The.....	Houghton, Bayfield Co.....	Stone	1888
1195 C., St. P., M. & O. Ry.....	Hudson, St. Croix Co.....	Mfrs. Freight Cars and Gen. Rep.....	1890
1196 Egloff, William A.....	Hudson, St. Croix Co.....	Mfrs Cigars	1890
1197 Enterprise Steam Laundry	Hudson, St. Croix Co.....	Laundry	1897
1198 Hudson Saw Mill Co.....	Hudson, St. Croix Co.....	Mfrs. Lumber	1889
1199 Hudson Star & Times	Hudson, St. Croix Co.....	Publishing and Printing	1854
1200 Interstate Mfg. Co.....	Hudson, St. Croix Co.....	Bee Hives, Sections, Cases, etc.....	1897
1201 Turner, William	Hunting, Shawano Co.....	Lumber and Shingles	1888
1202 Hurley Steam Boiler Wks.....	Hurley, Iron County.....	Mfrs. Steam Boilers	1886
1203 Iron Co. Republican, The.....	Hurley, Iron County.....	Printers and Publishers	1893
1204 Montreal River Miner, The.....	Hurley, Iron County.....	Printers and Publishers	1885
1205 Ruplinger Bros., & Co.....	Hewett, Wood County	Heading and Staves .....	.....
1206 Sempson & Gould	Herbster, Bayfield Co.....	Logging Contractors	1895
1207 Fricker, William	Independence, Buffalo Co.....	Mfrs. Beer	1891
1208 Independence News-Wave	Independence, Buffalo Co.....	Publishers and Printers.....	1877
1209 Meyers, S. M., & Co.....	Independence, Buffalo Co.....	Mfrs. Flour and Feed.....	1877

1210	Wisconsin Good Templar.....	Independence, Buffalo Co.....	Publishers and Printers	1891
1211	French Lumber Co.....	Ingram, Chippewa Co.....	Mfrs. Lumber, Lath and Shingles	1889
1212	Iron River Pioneer	Iron River, Bayfield Co.....	Mfrs. Lumber, Lath and Shingles.....	1892
1213	Lea Ingram Lumber Co., The	Iron River, Bayfield Co.....	Publishers and Printers.....	1888
1214	Rielly Nolan Lumber Co.....	Iron River, Bayfield Co.....	Mfrs. Lumber	1892
1215	Coffin Box & Lumber Co.....	Irvington, Dunn County	Mfrs. Boxes, Baskets and Lumber.....	1891
1216	Chicago & N. W. R. R. Repair Shops.....	Janesville, Rock County	Repairing Cars	1863
1217	Clinton, W. E., & Co.....	Janesville, Rock County	Book Binders	1895
1218	Ford Milling Co.....	Janesville, Rock County	Mfrs. of Flour	1880
1219	Globe Work Co.....	Janesville, Rock Co.....	Mfrs. Engines, Pumps, Etc.....	1888
1220	Gazette Printing Co.....	Janesville, Rock County	Publishing	1845
1221	Green & Daily	Janesville, Rock County	Mfrs. Sash, Doors and Blinds	1879
1222	Hall Furniture Co.....	Janesville, Rock County	Mfrs. Furniture	1891
1223	Hanson Furniture Co.....	Janesville, Rock County	Mfrs. of Furniture	1890
1224	Janesville Barb Wire Co.....	Janesville, Rock County	Mfrs. of Barb Wire and Nails.....	1882
1225	Janesville Carriage Works	Janesville, Rock County	Mfrs. of Carriages	1893
1226	Janesville Clothing Co.....	Janesville, Rock County	Mfrs. of Clothing	1883
1227	Janesville Cotton Mills	Janesville, Rock County	Mfrs. of Sheeting	1874
1228	Janesville Electric Company	Janesville, Rock County	Electric Light and Power	1895
1229	Janesville Hay Tool Company	Janesville, Rock County	Mfrs. of Haying Machinery	1885
1230	Janesville Machine Co.....	Janesville, Rock County	Mfrs. of Agricultural Implements	1868
1231	Janesville Planing Mill	Janesville, Rock County	Mfrs. All Kinds of Wood Work.....	1897
1232	Lewis Knitting Works	Janesville, Rock County	Knit Goods	1871
1233	Marzluff, F. M., & Co.....	Janesville, Rock County	Mfrs. Ladies' Fine Shoes	1885
1234	New Doty Mfr. Co.....	Janesville, Rock County	Mfrs. of Iron Working Machinery	1867
1235	New Gas Light Company.....	Janesville, Rock County	Mfrs. of Gas	1856
1236	Recorder Printing Co.....	Janesville, Rock County	Printing and Publishing.....	1871
1237	Republican Printing Co.....	Janesville, Rock County	Printers and Publishers	1890
1238	Richardson & Norcross	Janesville, Rock County	Mfrs. of Fine Shoes	1893
1239	Riverside Steam Laundry	Janesville, Rock County	Laundry	1891
1240	Rock River Cotton Co.....	Janesville, Rock County	Mfrs. Cotton Batting, Twine, Etc.....	1874
1241	Shackleton, J. M.	Janesville, Rock County.....	Mfrs. of Flour	1894
1242	Soulman, John	Janesville, Rock County.....	Mfrs. of Cigars.....	1889
1243	Taylor, M. D., & Morris.....	Janesville, Rock County.....	Machinery, Wood Workers	1890
1244	Thoroughgood & Co.....	Janesville, Rock County.....	Mfrs. Cigar Boxes	1874
1245	The Troy Steam Laundry.....	Janesville, Rock County.....	Laundry	1897

Name of Firm.	Location.	Kind of Goods Made or Work Done.	Estab- lished.
1246 Wisconsin Carriage Top Co.....	Janesville, Rock County.....	Mfrs. of Carriage and Carriage Tops....	1897
1247 Wisconsin Paper Box Co.....	Janesville, Rock County.....	Mfrs. of Paper Boxes.....	1897
1248 Woodruff, H. S., & Co.....	Janesville, Rock County.....	Mfrs. of Trace Buckles.....	1890
1249 Ambrose, F. O.....	Jefferson, Jefferson County.....	Mfrs. Engines, Boilers and Tanks.....	1890
1250 City Brewery.....	Jefferson, Jefferson County.....	Brewers and Malsters.....	1873
1251 The Copeland & Ryder Co.....	Jefferson, Jefferson County.....	Mfrs. Boots and Shoes.....	1868
1252 Fernhoitz & Waterberry.....	Jefferson, Jefferson County.....	Mfrs. Sash, Doors, Blinds and Mouldings.	1893
1253 Gannon & Johnson.....	Jefferson, Jefferson County.....	Mfrs. Flour and Feed.....	1850
1254 Hemel, John G.....	Jefferson, Jefferson County.....	Mfrs. Leather.....	1865
1255 Jefferson Banner.....	Jefferson, Jefferson County.....	Publishing and Printing.....	1860
1256 Jefferson Brewing & Malting.....	Jefferson, Jefferson County.....	Brewers.....	1895
1257 Jefferson Brick & Tile Co.....	Jefferson, Jefferson County.....	Mfr. Brick and Tile.....	1886
1258 Jefferson Co. Union & Hoard's Dairyman.	Jefferson, Jefferson County.....	Publishing and Printing.....	1870
1259 Jefferson Electric Light Co.....	Jefferson, Jefferson County.....	Lighting City.....	1893
1260 Jefferson Printing Co.....	Jefferson, Jefferson County.....	Publishing and Printing.....	1895
1261 Jefferson Woolen Mills.....	Jefferson, Jefferson County.....	Mfrs. Blankets and Woolen Cloth.....	1870
1262 Kemmeter Bros.....	Jefferson, Jefferson County.....	Mfrg. Brick.....	1875
1263 Lentz, Chas.....	Jefferson, Jefferson County.....	Mfr. Cigars.....	1882
1264 Lytle-Stoppenbach Co., The.....	Jefferson, Jefferson County.....	Elevator and Feed Mill.....	1872
1265 Metzzen, M. C., & Son.....	Jefferson, Jefferson County.....	Stone and Marble Works.....	1880
1266 Stoppenbach, C., & Sons.....	Jefferson, Jefferson County.....	Meat Packers and Wholesale Dealers.....	1882
1267 Troeger & Company, George.....	Jefferson, Jefferson County.....	Farmers Horse Collars and Fly Nets....	1874
1268 The Lytle-Stoppenbach Company.....	Jefferson, Jefferson County.....	Grain Elevator and Malsters.....	1891
1269 Vaugh Mfg. Company.....	Jefferson, Jefferson County.....	Mfrs. Agricultural Implements.....	1877
1270 Wisconsin Mfg. Co.....	Jefferson, Jefferson County.....	Mfrs. Chairs.....	1857
1271 Brokaw Pulp Co.....	Kaukauna, Outagamie Co.....	Ground Wood Pulp.....	1885
1272 C. & N. W. Ry. Repair Shop.....	Kaukauna, Outagamie Co.....	Repairing Locomotive and Cars.....	1883
1273 Fox River Pulp Co.....	Kaukauna, Outagamie Co.....	Wood Pulp.....	1882
1274 Hoene & Langworth.....	Kaukauna, Outagamie Co.....	Machine Repair Shop.....	1892
1275 Kaukauna Elec. Light Co.....	Kaukauna, Outagamie Co.....	Electric Light.....	1892
1276 Kaukauna Fibre Co.....	Kaukauna, Outagamie Co.....	Sulphite Pulp.....	1889
1277 Kaukauna Lumber Co.....	Kaukauna, Outagamie Co.....	Planing Mill.....	1881

1278	Kaukauna Machine Co.....	Kaukauna, Outagamie Co.....	Paper Mill Machinery	1890
1279	Kaukauna Steam Laundry.....	Kaukauna, Outagamie Co.....	Laundry	1894
1280	Kaukauna Times, The.....	Kaukauna, Outagamie Co.....	Printing and Publishing.....	1880
1281	Outagamie Paper Co.....	Kaukauna, Outagamie Co.....	Paper and Wood Pulp.....	1883
1282	Reese Pulp Co.....	Kaukauna, Outagamie Co.....	Wood Pulp	1888
1283	Solar Mfg. Co., The.....	Kaukauna, Outagamie Co.....	Dustless Fanning Mills.....	1892
1284	Thilmanv Pulp & Paper Mill.....	Kaukauna, Outagamie Co.....	Paper and Pulp.....	1889
1285	Victoria mills	Kaukauna, Outagamie Co.....	Flour and Feed.....	1880
1286	Western Paper Bag Co.....	Kaukauna, Outagamie Co.....	Paper and Wood Pulp.....	1883
1287	Green Bay Agency.....	Keshena, Shawano Co.....	Lumber and Flour.....	1885
1288	Allen's, N. R., Sons.....	Kenosha, Kenosha Co.....	Tanners	1856
1289	Bain Wagon Co., The Lmt.....	Kenosha, Kenosha Co.....	Wagons	1852
1290	Chicago Brass Co.....	Kenosha, Kenosha Co.....	Rolled Brass	1887
1291	Chicago, Rockford Hosiery Co.....	Kenosha, Kenosha Co.....	Hosiery	1893
1292	Fidelity Steam Laundry.....	Kenosha, Kenosha Co.....	Laundry	1894
1293	Grant, C., Mrs.....	Kenosha, Kenosha Co.....	Sash, Doors and Blinds.....	1878
1294	Head, E. R.....	Kenosha, Kenosha Co.....	Publishing and Printing.....	1839
1295	Kenosha Crib Co., The.....	Kenosha, Kenosha Co.....	Woven Wire Cribs, Cots, Cradles, etc.....	1883
1296	Kenosha Daily Gazette, The.....	Kenosha, Kenosha Co.....	Printing and Publishing.....	1890
1297	Kenosha Daily Union, The.....	Kenosha, Kenosha Co.....	Printing and Publishing.....	1865
1298	Kenosha Steam Laundry.....	Kenosha, Kenosha Co.....	Laundry	1889
1299	Northwestern Wire Mattress Co.....	Kenosha, Kenosha Co.....	Wire Mattresses	1890
1300	O'Donnell, John	Kenosha, Kenosha Co.....	Wood and Coal.....	1886
1301	Petit, H. M., Malting Co.....	Kenosha, Kenosha Co.....	Malt	1887
1302	Pirsch, Nicholas	Kenosha, Kenosha Co.....	Wagons	1863
1303	Sterling Cycle Co.....	Kenosha, Kenosha Co.....	Bicycles	1895
1304	Sieg. Chas. H., Mfg. Co.....	Kenosha, Kenosha Co.....	Bicycles	1895
1305	Wells & Messier.....	Kenosha, Kenosha Co.....	Founders and Machinists.....	1893
1306	Whitaker, R. B.....	Kenosha, Kenosha Co.....	Founders and Machinists	1865
1307	Windsor Spring Co., The.....	Kenosha, Kenosha Co.....	Spring Beds.....	1894
1308	Bargmann, John M.....	Kewaunee, Kewaunee Co.....	Sash, Doors and Blinds.....	1882
1309	Hamachek, Frank.....	Kewaunee, Kewaunee Co.....	Agricultural Imp. and Machinery.....	1855
1310	Kewaunee Enterprise Printing Co.....	Kewaunee, Kewaunee Co.....	Publishing and Printing.....	1859
1311	Kewaunee Iron Works	Kewaunee, Kewaunee Co.....	Machinists	1894
1312	Kewaunee Milling Co.....	Kewaunee, Kewaunee Co.....	Flour	1870
1313	Kewaunee Printing Co.....	Kewaunee, Kewaunee Co.....	Publishers and Printers.....	1885
1314	Kewaunee Listy.....	Kewaunee, Kewaunee Co.....	Publishers and Printers.....	1892
1315	Mauger, E. C., & Son.....	Kewaunee, Kewaunee Co.....	Coffins and Planing Mill.....	1896

Name of Firm.	Location.	Kind of Goods Made or Work Done.	Estab-lished.
1316 Werninger & Wittke	Kewaunee, Kewaunee Co.....	Canning Peas and Mfg. Butter.....	1896
1317 Ziemer, Aug., & Co.....	Kewaunee, Kewaunee Co.....	Iron Castings.....	1896
1318 Kiel Mfg. Co.....	Kiel, Calumet Co.....	Tables.....	1892
1319 Kiel Wooden Ware Co.....	Kiel, Calumet Co.....	Cheese Boxes, Butter Pails, etc.....	1884
1320 Marshall Machine Co.....	Kilbourn, Columbia Co.....	Windmills and Sawing Machines.....	1880
1321 Kimball & Clark.....	Kimball, Iron Co.....	Pine and Hard Wood Lumber.....	1889
1322 Kimberly & Clark.....	Kimberly, Outagamie Co.....	Sulphate and Ground Wood Pulp.....	....
1323 Douglass, H. L.....	Lake Mills, Jefferson Co.....	Flour and Feed.....	1845
1324 Fargo, F. B., & Co.....	Lake Mills, Jefferson Co.....	Creamery Machinery.....	1870
1325 Lake Mills Leader, The.....	Lake Mills, Jefferson Co.....	Publishing and Printing.....	1880
1326 Seavers, F. A.....	Lake Mills, Jefferson Co.....	Oil Tempered Knives and Cleavers.....	1873
1327 Lehigh Lumber Co.....	Lehigh, Barron Co.....	Lumber.....	1890
1328 Netzer, N. C., & Scheeg.....	Lena, Oconto Co.....	Flour.....	1895
1329 De Long, R. M.....	Leon, Monroe Co.....	Flour and Feed.....	1856
1330 Little Chute Pulp Co.....	Little Chute, Outagamie.....	Ground Wood Pulp.....	1893
1331 Aiken Gleason Co., The.....	La Crosse, La Crosse Co.....	Photographic Supplies.....	1896
1332 Anderson Mons Co., The.....	La Crosse, La Crosse Co.....	Overalls, Shirts and Pants.....	1875
1333 Benton & McDonald.....	La Crosse, La Crosse Co.....	Electrical Machinery.....	....
1334 Boycott, Walter.....	La Crosse, La Crosse Co.....	Printing and Binding.....	1879
1335 Cargill, W. W.....	La Crosse, La Crosse Co.....	Grain Elevator.....	1880
1336 Chicago, Burlington & N. Ry.....	La Crosse, La Crosse Co.....	Repairing Cars.....	1886
1337 C., M. & St. Paul Round House.....	La Crosse, La Crosse Co.....	Repairing Cars.....	1858
1338 Colman, C. L.....	La Crosse, La Crosse Co.....	Lumber, Lath and Shingles.....	1858
1339 Davis, Medary & Platz Co.....	La Crosse, La Crosse Co.....	Harness Leather.....	1877
1340 Davis, Sorenson & Co.....	La Crosse, La Crosse Co.....	Contractors and Builders.....	1887
1341 Dengler, John.....	La Crosse, La Crosse Co.....	Cigars.....	1884
1342 De Soto Lumber Co.....	La Crosse, La Crosse Co.....	Lumber.....	1893
1343 Doud Sons & Co.....	La Crosse, La Crosse Co.....	Flour Barrels.....	1870

1344	Eagle Brewery	La Crosse, La Crosse Co.....	Lager Beer	1885
1345	Eureka Chemical & Mfg. Co.....	La Crosse, La Crosse Co.....	Chemicals	1892
1346	Franklin Iron Works.....	La Crosse, La Crosse Co.....	Machinists and Founders.....	1875
1347	Funke, Jos. B.....	La Crosse, La Crosse Co.....	Confectionery	1880
1348	Funk, M., Bolters Wks. Co.....	La Crosse, La Crosse Co.....	Boilers	1865
1349	Gateway City Laundry.....	La Crosse, La Crosse Co.....	Laundry	1892
1350	Gateway City Lumber Co.....	La Crosse, La Crosse Co.....	Lumber	1884
1351	Goddard, H.....	La Crosse, La Crosse Co.....	Lumber	1867
1352	Gund, John, Brewing Co., The.....	La Crosse, La Crosse Co.....	Lager Beer	1873
1353	Hackner, E.....	La Crosse, La Crosse Co.....	Church Furniture, etc.....	1881
1354	Haerter, N.....	La Crosse, La Crosse Co.....	Blank Books	1882
1355	Helleman, G., Brewing Co.....	La Crosse, La Crosse Co.....	Lager Beer	1857
1356	Holway, N. B., Estate.....	La Crosse, La Crosse Co.....	Lumber, Lath and Shingles.....	1857
1357	Hyde, S. Y., Elevator Co., El. A.....	La Crosse, La Crosse Co.....	Grain Elevator	1870
1358	James, John & Co.....	La Crosse, La Crosse Co.....	Founders and Machinists.....	1874
1359	Kratchwil, M.....	La Crosse, La Crosse Co.....	Confectionery	1892
1360	Kuhn, R. C., & Co.....	La Crosse, La Crosse Co.....	Sash, Doors and Blinds	1895
1361	La Crosse Box Co.....	La Crosse, La Crosse Co.....	Boxes	1889
1362	La Crosse Boot & Shoe Co.....	La Crosse, La Crosse Co.....	Boots and Shoes.....	1889
1363	La Crosse Brush & Elec. Lgt. & P. Co.....	La Crosse, La Crosse Co.....	Light for City.....	1881
1364	La Crosse City Ry. Co.....	La Crosse, La Crosse Co.....	Street Railway	1893
1365	La Crosse City Water Works.....	La Crosse, La Crosse Co.....	Supplying Water	1877
1366	La Crosse Coffee & Spice Mill.....	La Crosse, La Crosse Co.....	Baking Powder, etc.....	1893
1367	La Crosse Cracker & Candy Co.....	La Crosse, La Crosse Co.....	Candy and Crackers.....	1884
1368	La Crosse Edison Lgt. & Power Co.....	La Crosse, La Crosse Co.....	Light and Power	1887
1369	La Crosse Foundry & Machine Shop.....	La Crosse, La Crosse Co.....	Furnaces, etc.....	1876
1370	La Crosse Gas Co.....	La Crosse, La Crosse Co.....	Gas for City.....	1863
1371	La Crosse Knitting Co.....	La Crosse, La Crosse Co.....	Hosiery and Mittens.....	1886
1372	La Crosse Linseed Oil Co.....	La Crosse, La Crosse Co.....	Linseed Oil and Oil Cakes.....	1884
1373	La Crosse Lumber Co.....	La Crosse, La Crosse Co.....	Lumber	1871
1374	La Crosse Paper Box Co.....	La Crosse, La Crosse Co.....	Paper Boxes	1892
1375	La Crosse Plow Works.....	La Crosse, La Crosse Co.....	Agricultural Implements	1865
1376	La Crosse Printing & Pub. Co.....	La Crosse, La Crosse Co.....	Newspaper and Job Printing.....	1857
1377	La Crosse Soap Co.....	La Crosse, La Crosse Co.....	Soap	1858
1378	La Crosse Soda Water Factory.....	La Crosse, La Crosse Co.....	Soda Water	1892
1379	La Crosse Steam Laundry.....	La Crosse, La Crosse Co.....	Laundry	1884
1380	La Crosse Steel Roofing & Corrugating Co.....	La Crosse, La Crosse Co.....	Steel Roofing, etc.....	1896
1381	La Crosse Tidende.....	La Crosse, La Crosse Co.....	Printing and Publishing	1895
1382	La Crosse Vinegar & Pickling Co.....	La Crosse, La Crosse Co.....	Vinegar and Pickles.....	1893

Name of Firm.	Location.	Kind of Goods Made or Work Done.	Estab. lished.
1383 La Crosse Wallis Carriage Co.....	La Crosse, La Crosse Co.....	Carriages and Sleighs.....	1885
1384 Listman Mill Co.....	La Crosse, La Crosse Co.....	Flour.....	1879
1385 Medary, J. S., Saddlery Co.....	La Crosse, La Crosse Co.....	Saddles, Collars and Fly Nets.....	1860
1386 Michel, C. J., Brewing Co.....	La Crosse, La Crosse Co.....	Lager Beer.....	1857
1387 Miller, August.....	La Crosse, La Crosse Co.....	Brooms.....	1881
1388 Nordstern Association.....	La Crosse, La Crosse Co.....	Printing and Publishing.....	1856
1389 North La Crosse Brewing Co.....	La Crosse, La Crosse Co.....	Lager Beer.....	1885
1390 Novelty Wood Work.....	La Crosse, La Crosse Co.....	Sash, Doors and Blinds.....	1883
1391 Pamperin & Wiggenhorn Co.....	La Crosse, La Crosse Co.....	Cigars.....	1866
1392 Paul John Lumber Co.....	La Crosse, La Crosse Co.....	Lumber.....	1860
1393 Phoenix Mfg. Co.....	La Crosse, La Crosse Co.....	Cigar Boxes.....	1896
1394 Press Publishing Co., The.....	La Crosse, La Crosse Co.....	Publishers and Printers.....	1879
1395 Salzer, John A., Co.....	La Crosse, La Crosse Co.....	Seed Grower.....	1879
1396 Sawyer & Austin Lbr. Co.....	La Crosse, La Crosse Co.....	Saw Mill and Lbr. Yard.....	1884
1397 Segelke & Kohlhaus Mfg. Co.....	La Crosse, La Crosse Co.....	Sash, Doors and Blinds.....	1862
1398 Smith Mfg. Co.....	La Crosse, La Crosse Co.....	Wagons.....	1861
1399 Solberg, Wm. J.....	La Crosse, La Crosse Co.....	Boilers.....	1886
1400 Spicer & Buschman.....	La Crosse, La Crosse Co.....	Job Printers.....	1886
1401 Star Knitting Co.....	La Crosse, La Crosse Co.....	Mittens and Gloves.....	1888
1402 Star Steam Laundry.....	La Crosse, La Crosse Co.....	Laundry.....	1884
1403 Trow, A. S., & Co.....	La Crosse, La Crosse Co.....	Lumber, Lath and Shingles.....	1865
1404 Volksfreund Pub. Co.....	La Crosse, La Crosse Co.....	Printers and Publishers.....	1891
1405 West Wisconsin Iron Works.....	La Crosse, La Crosse Co.....	Mill Machinery.....	1879
1406 Wheel & Seeder Mfg. Co.....	La Crosse, La Crosse Co.....	Agricultural Implements.....	1868
1407 Yeo & Clark.....	La Crosse, La Crosse Co.....	Flour and Feed.....	1880
1408 Flambeau Lumber Co.....	Lac Du Flambeau, Vilas Co.....	Lumber, Lath and Shingles.....	
1409 Flambeau Lumber Co.....	Lac Du Flambeau, Vilas Co.....	Lumber, Lath and Shingles.....	
1410 Graves, A. A.....	Loyal, Clark Co.....	Lumber.....	1885
1411 Loyal Tribune, The.....	Loyal, Clark Co.....	Publishing and Printing.....	1894
1412 Ruplinger Stave and Heading Co.....	Loyal, Clark Co.....	Staves, Heading and Lumber.....	1891
1413 Alford Bros. Steam Laundry.....	Madison.....	Steam Laundry.....	1884
1414 Amerika Pub. Company, The.....	Madison.....	Publishers and Printers.....	1896

1415	Baus, Ambrecht & Wagner.....	Madison	Manufacturers Cigars.....	1889
1416	Breckheimer's Brewery	Madison	Brewers	1865
1417	Campbell, Alex. S.....	Madison	Merchant Millers	1897
1418	Cantwell, M. J.....	Madison	Publishers of Standard Law Blanks.....	1867
1419	Capital City Mills, Dow & Sons.....	Madison	Merchant Millers	1888
1420	Chicago, Milwaukee & St. Paul Ry.....	Madison	Round House and Repair Shops	1857
1421	Chicago & Northwestern Ry.....	Madison	Round House and Repair Shops	1885
1422	Democrat Printing Company.....	Madison	Printers and Pub. of Daily and Weekly.....	1867
1423	Curtis, Dexter	Madison	Zinc Lined Boss Collar Pad.....	1870
1424	Fauerbach Brewing Co.....	Madison	Mfr. of Beer	1847
1425	F. F. F. Steam Laundry.....	Madison	Steam Laundry	1880
1426	Frederickson & Sons.....	Madison	Sash, Doors and Blinds.....	1858
1427	Fuller & Johnson.....	Madison	Agricultural Implements	1840
1428	Gisholt Machine Company.....	Madison	Mfrs. Machine Tools	1889
1429	Grove, H., & Son.....	Madison	Mfrs. Cigars	1859
1430	Hart Parr Company, The.....	Madison	Internal Combustion Engines.....	1897
1431	Hausmann Brewing Co.....	Madison	Mfrs. of Beer	1863
1432	Johnson, Harry	Madison	Contractor and Builder	1897
1433	King & Walker.....	Madison	Foundry Machine Works	1894
1434	Ledwith, James	Madison	Mfrs. Buggies, Sleighs and Phaetons.....	1863
1435	Madison Book Bindery	Madison	General Book Binders	1874
1436	Madison City Water Works.....	Madison	Supply Water City Use.....	1882
1437	Madison Gas & Electric Company.....	Madison	Supply Gas and Electric Light	1896
1438	Madison Saddlery Company.....	Madison	Mfrs. of Harness	1888
1439	Malec & Bros.....	Madison	Boots and Shoes	1879
1440	Northern Electrical Company.....	Madison	Mfr. Dynamos, Motors, Etc.....	1895
1441	Old Dane Printing Company.....	Madison	Publishers and Printers	1897
1442	Schmidt, Aug., & Company.....	Madison	Mfrs. Carriages and Sleighs.....	.....
1443	Silbernagel, J. J.....	Madison	Mfrs. Sash, Doors and Blinds	1882
1444	Standard Telephone & Electric Co.....	Madison	Mfrs. Telephones	1895
1445	Stark Mfr. Company, The.....	Madison	Mfrs. Sash, Doors and Blinds	1856
1446	State Journal Printing Co.....	Madison	Printing, Publishing and Stereotyping.....	1837
1447	Schlimgen & Son.....	Madison	Mfrs. of Monuments	1882
1448	Swenson, J. H.....	Madison	Mfrs. Sash and Doors	1888
1449	Taylor & Gleason.....	Madison	Printers and Publishers	1892
1450	Teckemeyer Candy Company.....	Madison	Mfr. Confectionery	1888
1451	Tracy, Gibbs & Company.....	Madison	Publishers and Printers	1889
1452	J. S. Vetter	Madison	Contractors and Builders	1891

Name of Firm.	Location.	Kind of Goods Made or Work Done.	Estab-lished.
1453 F. D. Winklery.....	Madison	Mfr. Dust Proof Oil Hole Covers.....	1892
1454 Wisconsin Wagon Company.....	Madison	Mfrs. Carriages, Ice Wagons and Drays.	1883
1455 Advocate, The.....	Manawa, Waupaca Co.....	Publishing and Printing.....	1895
1456 Nelson Esche Milling Co.....	Manawa, Waupaca Co.....	Flour	1889
1457 Little Wolf River Lumber Co.....	Manawa, Waupaca Co.....	Lumber, Lath and Shingles.....	1892
1458 Biegel & Guse.....	Manitowoc, Manitowoc Co.....	Planing Mill	1888
1459 Brand Printing & Binding Co.....	Manitowoc, Manitowoc Co.....	Job Printing and Book Binding	1891
1460 Burger, H. B. & G. B.....	Manitowoc, Manitowoc Co.....	Ship Building and Repairing	1875
1461 Doffert, Chas.....	Manitowoc, Manitowoc Co.....	Leather	1865
1462 Dorst, H., & Son.....	Manitowoc, Manitowoc Co.....	Cigar and Paper Boxes	1877
1463 Hyroth, F.....	Manitowoc, Manitowoc Co.....	Pearl Buttons	1890
1464 Kiel & Gehrke	Manitowoc, Manitowoc Co.....	Sash, Doors, Blinds, and Planing Mill..	1897
1465 Kuntz Kieser & Co.....	Manitowoc, Manitowoc Co.....	Beer	1879
1466 Landreth, A. Seed Co., The.....	Manitowoc, Manitowoc Co.....	Canning Peas	1890
1467 Manitowoc Building Supply Co.....	Manitowoc, Manitowoc Co.....	Doors, Blinds and Planing	1896
1468 Manitowoc Coal & Dock Co.....	Manitowoc, Manitowoc Co.....	Coal Dealers.....	1886
1469 Manitowoc Electric Light Co.....	Manitowoc, Manitowoc Co.....	Electric Light and Power	1890
1470 Manitowoc Glue Co.....	Manitowoc, Manitowoc Co.....	Glue	1868
1471 Manitowoc Land Plaster Works	Manitowoc, Manitowoc Co.....	Land Plaster	1877
1472 Manitowoc Pilot, The.....	Manitowoc, Manitowoc Co.....	Publishing and Printing	1859
1473 Manitowoc Seating Co., The.....	Manitowoc, Manitowoc Co.....	School and Church Furniture.....	1892
1474 Manitowoc Steam Boiler Works.....	Manitowoc, Manitowoc Co.....	Boilers and Smoke Stacks.....	1890
1475 Oriental Mills.....	Manitowoc, Manitowoc Co.....	Milling	1868
1476 Palace Steam Laundry	Manitowoc, Manitowoc Co.....	Laundry	1897
1477 Prochatzka & Chlonpek	Manitowoc, Manitowoc Co.....	Machinery	1867
1478 Richards Iron Works	Manitowoc, Manitowoc Co.....	Engines, Pumps and Machinery	1868
1479 Richter, A. M., & Son.....	Manitowoc, Manitowoc Co.....	Vinegar	1875
1480 Rohr, Wm. Sons Co., The.....	Manitowoc, Manitowoc Co.....	Beer and Malt	1848
1481 Schierhardt Brewing Co.....	Manitowoc, Manitowoc Co.....	Beer and Malt.....	1855
1482 Schnorr Bros.....	Manitowoc, Manitowoc Co.....	Leather	1877
1483 Smalley Mfg. Co.....	Manitowoc, Manitowoc Co.....	Agricultural Implements	1887
1484 Snow Flake Laundry	Manitowoc, Manitowoc Co.....	Laundry	1893

1485	Vitz, Henry	Manitowoc, Manitowoc Co.	Leather	1864
1486	Wagner, E.	Manitowoc, Manitowoc Co.	Tinware, etc.	1882
1487	Willott, J. W., & Sons.	Manitowoc, Manitowoc Co.	Axes and Feed Cutting Knives	1871
1488	Deprato, Phillip	Marathon, Marathon Co.	Lumber	1891
1489	Hamann, Edward	Marathon, Marathon Co.	Lumber	1888
1490	Hermann, Edward	Marathon, Marathon Co.	Flour	1890
1491	Lewis, John	Marathon, Marathon Co.	Lumber	1888
1492	Schilling & Lemmer	Marathon, Marathon Co.	Hoops and Staves	1897
1493	Stubefauth, Geo., Bros.	Marathon, Marathon Co.	Beer	1885
1494	Volmn & Graube	Marathon, Marathon Co.	Planing Mill	1892
1495	Declint & Prescott.	Marinette, Oconto Co.	Engine and Saw Mill Machinery	1870
1496	Eagle Printing Co.	Marinette, Oconto Co.	Publishing and Printing	1874
1497	Hamilton & Merryman Co.	Marinette, Oconto Co.	Lumber, Lath and Shingles.	1873
1498	Hoppert, H. D.	Marinette, Oconto Co.	Shingles	1893
1499	Lieber & Noel Mfg. Co.	Marinette, Oconto Co.	Shingles	1893
1500	Linden & Miller	Marinette, Oconto Co.	Building Material, Sash, etc.	1884
1501	Ludington, N. W., Co.	Marinette, Oconto Co.	Lumber, Lath and Shingles.	1885
1502	Marinette Co. Argus, The.	Marinette, Oconto Co.	Publishing and Printing	1887
1503	Marinette Flour Mill Co.	Marinette, Oconto Co.	Milling	1879
1504	Marinette Gas Light & St. Ry. Co.	Marinette, Oconto Co.	Electric Light and Power	1890
1505	Marinette Lumber Co.	Marinette, Oconto Co.	Lumber, Lath and Shingles	1892
1506	Marinette & Menomonee Box Co.	Marinette, Oconto Co.	Packing Boxes	1890
1507	Marinette & Menomonee Paper Co., No. 1.	Marinette, Oconto Co.	Ground Wood and Sulphate Pulp	1880
1508	Marinette & Menomonee Paper Co., No. 2.	Marinette, Oconto Co.	Ground Wood and Sulphate Pulp	1892
1509	Marinette Planing Mill Co.	Marinette, Oconto Co.	Sash, Doors and Mouldings	1873
1510	Menomonee River Lumber Co.	Marinette, Oconto Co.	Lumber, Lath and Shingles	1887
1511	Merryman, R. W., & Co.	Marinette, Oconto Co.	Lumber, Lath and Shingles	1878
1512	North Star, The	Marinette, Oconto Co.	Publishing and Printing	1895
1513	Parisian Steam Laundry	Marinette, Oconto Co.	Laundry	1889
1514	Sawyer & Goodman Co.	Marinette, Oconto Co.	Lumber, Lath and Shingles	1879
1515	Scofield & Arnold Lumber Co.	Marinette, Oconto Co.	Lumber, Lath and Shingles.	1874
1516	Stevenson Mfg. Co., The	Marinette, Oconto Co.	Lumber, Lath and Shingles.	1888
1517	Twin City Lumberman, The	Marinette, Oconto Co.	Publishing and Printing	1895
1518	Union Steam Laundry	Marinette, Oconto Co.	Laundry	1895
1519	Whitbeck, H., & Co., The.	Marinette, Oconto Co.	Lumber, Lath and Shingles.	1868
1520	Goldthwait, Moses C.	Marion, Shawano Co.	Flour	1882
1521	Grosskopf, Bros.	Marion, Shawano Co.	Saw Mill and Shingles.	1889
1522	Madson, John	Marion, Shawano Co.	Lumber	1887
1523	Marion Furniture Co.	Marion, Shawano Co.	Furniture	1893
1524	Maul, Frank	Marion, Shawano Co.	Saw Mill	1887

Name of Firm.	Location.	Kind of Goods Made or Work Done.	Estab- lished.
1525 Rogers & Johnson.....	Marshfield, Wood Co.....	Excelsior	1894
1526 Billie, Hans	Marshfield, Wood Co.....	Contractor, Builder and Wood Work....	1892
1527 Hafer & Kalsched	Marshfield, Wood Co.....	Pine and Hard Wood Lumber.....	1887
1528 Hoelz, John G.	Marshfield, Wood Co.....	Cigars	1885
1529 Lister & Rasmussen	Marshfield, Wood Co.....	Flour and Feed	1896
1530 Marshfield Bedding Co., The.....	Marshfield, Wood Co.....	Spring Bed, Mattresses, etc.....	1894
1531 Marshfield Brewing Co.....	Marshfield, Wood Co.....	Beer	1890
1532 Marshfield Chair Mfg. Co.....	Marshfield, Wood Co.....	Chairs	1898
1533 Marshfield Iron Works.....	Marshfield, Wood Co.....	Machinists and Founders.....	1882
1534 Marshfield Stave Co.....	Marshfield, Wood Co.....	Staves	1882
1535 Marshfield Water Elec. & Power Co.....	Marshfield, Wood Co.....	Light and Water .....	...
1536 Metelke Bros.....	Marshfield, Wood Co.....	Mfg. Bicycles and Dealers.....	1897
1537 Roddis Veneer Co.....	Marshfield, Wood Co.....	Veneer Panels and Cheese Boxes.....	1891
1538 Upham Mfg. Co.....	Marshfield, Wood Co.....	Power House	1889
1539 Upham Mfg. Co.....	Marshfield, Wood Co.....	Planing Mill	1878
1540 Upham Mfg. Co.....	Marshfield, Wood Co.....	Flour and Feed	1888
1541 Upham Mfg. Co.....	Marshfield, Wood Co.....	Lumber, Lath and Shingles.....	1877
1542 Upum Mfg. Co., The.....	Marshfield, Wood Co.....	Furniture	1878
1543 Wisconsin Hoop Co.....	Marshfield, Wood Co.....	Hoops	1896
1544 Arcadia Mills	Mazomanie	Flour and Feed.....	1857
1545 Mazomanie Brewing Co.....	Mazomanie	Beer	1878
1546 Mazomanie Cabinet Co.....	Mazomanie	Furniture	1894
1547 Mazomanie Power House.....	Mazomanie	Ligat	1893
1548 White River Lumber Co.....	Mason, Bayfield Co.....	Lumber, Lath and Shingles.....	1883
1549 Antigo Mfg. Co.....	Mattoon, Shawano Co.....	Staves and Heading.....	1894
1550 Mat.oon Mfg. Co.....	Mattoon, Shawano Co.....	Veneering	1896
1551 Mattoon Mfg. Co.....	Mattoon, Shawano Co.....	Lumber	1887
1552 Mattoon Mfg. Co.....	Mattoon, Shawano Co.....	Furniture Material	1890
1553 Wis. Lumber & Land Co.....	Mattoon, Shawano Co.....	Lumber, Lath and Veneer.....	1898
1554 Mauston Milling Co.....	Mauston, Juneau Co.....	Flour and Feed.....	1881
1555 American Bottle Cover Mfg. Co.....	Mayville, Dodge Co.....	Hay and Straw Bottle Covers.....	1895

1556	Buerger Malting Co.....	Mayville, Dodge Co.....	Malt	1884
1557	Hollenstein, John	Mayville, Dodge Co.....	Wagons, Carriages and Sleighs.....	1875
1558	Northwestern Iron Co.....	Mayville, Dodge Co.....	Iron Works	1847
1559	German Publishing Co., The.....	Medford, Taylor Co.....	Publishers and Printers.....	1883
1560	Medford Mfg. Co.....	Medford, Taylor Co.....	Lumber and Excelsior.....	1895
1561	Medford Sentinel, The.....	Medford, Taylor Co.....	Publishers and Printers.....	1895
1562	Medford Star & News.....	Medford, Taylor Co.....	Publishers and Printers.....	1875
1563	Pollard, O. D.....	Medford, Taylor Co.....	Saw and Planing Mill.....	1894
1564	Shaw, T. F. M. and F. D., & Co.....	Medford, Taylor Co.....	Non-Acid Hemlock Sole Leather	1889
1565	McClellan, J. R.....	Medina, Outagamie Co.....	Saw Mill, Cheese Boxes, etc.....	1884
1566	Ruppel, J.....	Medina, Outagamie Co.....	Cheese Boxes	1886
1567	Wisconsin Butter & Cheese Co.....	Medina, Outagamie Co.....	Butter and Cheese.....	1893
1568	Shaw, Fayette & Co.....	Mellen, Ashland Co.....	Sole Leather	1896
1569	Cook, L. A.....	Menasha, Winnebago Co.....	Paper	1893
1570	Gilbert Paper Co.....	Menasha, Winnebago Co.....	Envelope Paper	1887
1571	Hanke, Louis.....	Menasha, Winnebago Co.....	Brick	1883
1572	Howard Paper Co.....	Menasha, Winnebago Co.....	Book and Print Paper.....	1888
1573	McKinnan, D. T. H.....	Menasha, Winnebago Co.....	Split Pulleys and Machinists.....	1893
1574	McKinnan Excelsior Co.....	Menasha, Winnebago Co.....	Excelsior	1880
1575	Menasha Boat Co.....	Menasha, Winnebago Co.....	Row and Sail Boats.....	1892
1576	Menasha Evening Breeze.....	Menasha, Winnebago Co.....	Publishing and Printing	1892
1577	Menasha Iron Works.....	Menasha, Winnebago Co.....	General Machinists	1875
1578	Menasha Press	Menasha, Winnebago Co.....	Publishing and Printing.....	1862
1579	Menasha Wood Split Pulley Co.....	Menasha, Winnebago Co.....	Wood and Split Pulleys.....	1888
1580	Menasha Woodenware Co.....	Menasha, Winnebago Co.....	Wash Tubs, Pails, Barrels, etc.....	1856
1581	Menasha Woolen Mills.....	Menasha, Winnebago Co.....	Woolen Goods	1867
1582	Schneider, John	Menasha, Winnebago Co.....	Planing Mill	1872
1583	Strange, J., Paper Co.....	Menasha, Winnebago Co.....	Manilla, Express and Book Paper.....	1881
1584	Walter Bros. Brewing Co.....	Menasha, Winnebago Co.....	Beer and Malt.....	1888
1585	Whiting, George H.....	Menasha, Winnebago Co.....	Print and Book Paper.....	1882
1586	Winnebago Anzeiger	Menasha, Winnebago Co.....	Publishing and Printing.....	1880
1587	Anderson Bros.....	Menomonie, Dunn Co.....	Cigars	1893
1588	Dunn Co. News, The	Menomonie, Dunn Co.....	Publishing and Printing.....	1860
1589	Ebert, T. R., & Co.....	Menomonie, Dunn Co.....	Sash and Doors.....	1895
1590	Knapp, Stout & Co. Company.....	Menomonie, Dunn Co.....	Lumber, Lath and Shingles.....	1846
1591	Menomonie Iron Works.....	Menomonie, Dunn Co.....	Foundry and Machine Shop.....	1894
1592	Menomonie Nordstern	Menomonie, Dunn Co.....	Publishing and Printing.....	1887
1593	Menomonie Pressed Brick Co.....	Menomonie, Dunn Co.....	Pressed Brick	1882
1594	Menomonie Times	Menomonie, Dunn Co.....	Publishing and Printing.....	1877

Name of Firm.	Location.	Kind of Goods Made or Work Done.	Estab-lished.
1595 Standard Pressed Brick Co.....	Menomonie, Dunn Co.....	Brick	1892
1596 S. and T. Laundry, The.....	Menomonie, Dunn Co.....	Laundry	1897
1597 Wisconsin Red Pressed Brick Co.....	Menomonie, Dunn Co.....	Brick	1872
1598 Johnson, C. N.....	Merrill, Lincoln Co.....	Publishers and Printers.....	1874
1599 Gilkey & Anson Lumber Co.....	Merrill, Lincoln Co.....	Lumber, Lath and Shingles.....	1883
1600 Lerdiger Brewing Co.....	Merrill, Lincoln Co.....	Beer	1896
1601 Merrill Electric Laundry.....	Merrill, Lincoln Co.....	Laundry	1888
1602 Merrill Iron Works.....	Merrill, Lincoln Co.....	Founders and Machinists	1880
1603 Merrill Lumber Co.....	Merrill, Lincoln Co.....	Lumber, Lath and Shingles	1886
1604 Perley & Lowe.....	Merrill, Lincoln Co.....	Lumber, Lath and Shingles.....	.....
1605 Scott, T. B., Lumber Co.....	Merrill, Lincoln Co.....	Lumber, Lath and Shingles.....	1881
1606 Spiegelberg, C. F.....	Merrill, Lincoln Co.....	Flour and Feed.....	1878
1607 Strange, A. H., Co.....	Merrill, Lincoln Co.....	Lumber, Lath and Shingles.....	1885
1608 Tedd, Wm., Co.....	Merrill, Lincoln Co.....	Tannery	1895
1609 Wright, H. W., Lumber Co.....	Merrill, Lincoln Co.....	Lumber, Lath and Shingles.....	1881
1610 Gile, H. R.....	Merrillan, Jackson Co.....	Publishing and Printing.....	1877
1611 Merrill, A. D.....	Merrillan, Jackson Co.....	Lumber, Lath and Shingles.....	1895
1612 Trow, A. S.....	Merrillan, Jackson Co.....	Lumber, Lath and Shingles.....	1875
1613 Banner Creamery.....	Milton Junction, Rock Co.....	Butter	1894
1614 Swaney, John W.....	Milton Junction, Rock Co.....	Cigars	1884
1615 West, Wm. B.....	Milton Junction, Rock Co.....	Grist Mill and Resawing.....	1887
1616 Kelley Co.....	Mineral Point, Iowa Co.....	Asbestos Goods	1893
1617 Martin, John C.....	Mineral Point, Iowa Co.....	Grist Mill	1896
1618 Mineral Point Electric Light Co.....	Mineral Point, Iowa Co.....	Electric Light	1897
1619 Mineral Point Laundry.....	Mineral Point, Iowa Co.....	Laundry	1894
1620 Mineral Point Linen & Fibre Co.....	Mineral Point, Iowa Co.....	Paper and Soda Fibre	1893
1621 Mineral Point Tribune.....	Mineral Point, Iowa Co.....	Publishing and Printing.....	1845
1622 Mineral Point Woolen Mfg. Co.....	Mineral Point, Iowa Co.....	Blankets	1891
1623 Mineral Point Zinc Works.....	Mineral Point, Iowa Co.....	Oxide Zinc	1882
1624 Tornado Brewery.....	Mineral Point, Iowa Co.....	Beer	1850
1625 Blumer Bottling Works.....	Monroe, Green Co.....	Bottling Beer	1897
1626 Brodhead Roller Mills.....	Monroe, Green Co.....	Flour and Grain Elevator.....	1852
1627 County Journal.....	Monroe, Green Co.....	Publishing and Printing.....	1887

1628	Fitzgibbons Bros.....	Monroe, Green Co.....	Wagons, Carriages and Sleighs.....	1880
1629	Freese, Fritz	Monroe, Green Co.....	Brick	1884
1630	Monroe Brewery	Monroe, Green Co.....	Beer	1845
1631	Monroe Electric Light & Power Co.....	Monroe, Green Co.....	Light and Power.....	1887
1632	Monroe Machine & Foundry Co.....	Monroe, Green Co.....	Boilers and Cheese Box Material.....	1895
1633	Monroe Planing Mill Co.....	Monroe, Green Co.....	Sash, Door, Blinds and Interior Work..	1849
1634	Monroe Roller Mills.....	Monroe, Green Co.....	Flour and Feed.....	1892
1635	Monroe Sentinel	Monroe, Green Co.....	Publishing and Printing.....	1850
1636	Schneider, C. H.....	Monroe, Green Co.....	Cigars	1886
1637	Troy Steam Laundry.....	Monroe, Green Co.....	Laundry	1891
1638	Union Printing Co.....	Monroe, Green Co.....	Publishing and Printing.....	1897
1639	Wisconsin Mill Co.....	Monroe, Green Co.....	Condensed Milk and Cream.....	1894
1640	Monticello Planing Mill Co.....	Monticello, Green Co.....	Planing Lumber	1890
1641	Monticello Roller Mills.....	Monticello, Green Co.....	Flour and Feed.....	1863
1642	Monticello Woolen Mills.....	Monticello, Green Co.....	Blankets and Flannels.....	1865
1643	Buckstaff Sprague Lbr. Co.....	Morris, Shawano Co.....	Saw and Planing Mill.....	1884
1644	Dessert, Joseph, Lbr. Co.....	Mosinee, Marathon Co.....	Lumber, Lath and Shingles.....	1844
1645	Mosinee Times, The.....	Mosinee, Marathon Co.....	Publishing and Printing.....	1895
1646	Phillips, George B.....	Muskeg, Bayfield Co.....	Lumber	1893
1647	Staples, E. & H.....	Mercer, Iron Co.....	Lumber, Lath and Shingles.....	1893
1648	Jenson, R.....	Norrie, Marathon Co.....	Mfg. Lumber	1885
1649	Neye, C. A.....	Norrie, Marathon Co.....	Planing Mill	1894
1650	Ashland Siskiwit & Iron River Logging Ry. Co.....	Nash, Bayfield Co.....	Railway Logging Co. and Repairing.....	1895
1651	Necedah Flour Mill.....	Necedah, Juneau	Flour and Feed.....	1884
1652	Necedah Lumber Co.....	Necedah, Juneau	Lumber, Lath and Shingles.....	1855
1653	Necedah Lumber Co.....	Necedah, Juneau	Lumber, Lath and Shingles.....	1855
1654	Alyward, Wm., & Son.....	Neenah, Winnebago	Mfg. Stoves	1879
1655	Bergstrom Bros., & Co.....	Neenah, Winnebago	Stoves and Ranges.....	1857
1656	Kimberly & Clark Co (Badger).....	Neenah, Winnebago	Mfg. Paper	1884
1657	Kimberly & Clark Co (Globe).....	Neenah, Winnebago	Mfg. Paper	1892
1658	Kimberly Clark Co. (Neenah).....	Neenah, Winnebago	Mfg. Paper	1888
1659	Krueger & Lachman.....	Neenah, Winnebago	Mfg. Flour	1889
1660	Neenah Boot & Shoe Mfg.....	Neenah, Winnebago	Boots and Shoes.....	1882
1661	Neenah Daily News.....	Neenah, Winnebago	Publishing and Printing.....	1891
1662	Neenah Dauskeren	Neenah, Winnebago	Printing and Publishing.....	1891

Name of Firm.	Location.	Kind of Goods Made or Work Done.	Estab-lished.
1663 Neenah & Menasha Gas & Electric Co....	Neenah, Winnebago	Electric Light for City.....	1886
1664 Neenah Paper Co.....	Neenah, Winnebago	Mfg. Paper	1873
1665 Neenah Planing Mill.....	Neenah, Winnebago	Ornamental Wood Work.....	1875
1666 Neenah Steam Laundry.....	Neenah, Winnebago	Laundry	1895
1667 Neenah Times, The.....	Neenah, Winnebago	Publishing and Printing.....	1868
1668 Winnebago Paper Mills.....	Neenah, Winnebago	Mfg. Paper	1875
1669 Brule, Emery	Neillsville, Clark	Mfr. Wagon Spokes.....	1893
1670 Ellert, Ernest (N. Brew. Co.).....	Neillsville, Clark	Mfr. Beer	1882
1671 Hein, John	Neillsville, Clark	Staves	1897
1672 Neillsville Mfg. Co.....	Neillsville, Clark	Furniture and Lumber	1889
1673 Neillsville Milling Co.....	Neillsville, Clark	Flour and Feed	1891
1674 Neillsville Planing & Saw Mill.....	Neillsville, Clark	Planing	1893
1675 Wolf & Korman.....	Neillsville, Clark	Wagons and Sleighs.....	1892
1676 Nekoosa Paper Co.....	Nekoosa	Paper, Ground Pulp, etc.....	1894
1677 Andrae, H. J., & Co.....	New London, Waupaca	Screen, Doors and Furniture.....	1891
1678 Excelsior Flour Mill.....	New London, Waupaca	Flour and Feed	1880
1679 Johnson Mfg. Co.....	New London, Waupaca	Lumber, Excelsior, etc.....	1881
1680 Knapstein, T., & Co.....	New London, Waupaca	Brewers and Malsters.....	1869
1681 Meikeljohn & Hatton.....	New London, Waupaca	Mfg. Lumber	1879
1682 Meikeljohn & Hatton	New London, Waupaca	Planing Mill	1879
1683 Madson, Hans P.....	New London, Waupaca	Machinist	1876
1684 New London Bent Wood Co.....	New London, Waupaca	Mfg. Bicycle Rims and Guards.....	1887
1685 New London Electric Light Co.....	New London, Waupaca	Electric Light for City	1890
1686 New London Iron Works.....	New London, Waupaca	Saw Mill Machinery	1891
1687 New London Press.....	New London, Waupaca	Publishing and Printing.....	1893
1688 New London Republican, The.....	New London, Waupaca	Publishing and Printing.....	1897
1689 New London Tribune.....	New London, Waupaca	Publishing and Printing.....	1890
1690 Page & Lyon Mfg. Co.....	New London, Waupaca	Mfg. Lumber	1885
1691 Page & Lyon Mfg. Co.....	New London, Waupaca	Honey Boxes and Bee Hives.....	1890
1692 Reuter, C. F.....	New London, Waupaca	Mfg. Cigars	1886
1693 New Richmond Mill.....	New Richmond, St. Croix.....	Flour and Feed.....	1882
1694 Northern Grain Co.....	New Richmond, St. Croix.....	Mfrs. Feed	1879

1695	Willow River Lumber Co.....	New Richmond, St. Croix.....	Lumber, Lath and Shingles.....	1881
1696	Briston, C. A.....	Oakfield, Fond du Lac.....	Screen Doors, Windows, etc.....	1880
1697	Citizen Light & Fuel Co.....	Oconto, Oconto	Electric Light for City.....	1887
1698	Cook Bros.	Oconto, Oconto	Planing Mill	1895
1699	Electric Mfg. Co.....	Oconto, Oconto	Electric Light Lamps.....	1892
1700	Enquirer, The	Oconto, Oconto	Publishing and Printing.....	1881
1701	Holt Lumber Co.....	Oconto, Oconto	Shingles and Cedar Post Mill.....	1892
1702	Holt Lumber Co., Plant A.....	Oconto, Oconto	Lumber, Lath and Shingles	1869
1703	Holt Lumber Co., Plant B.....	Oconto, Oconto	Planing Mill	1873
1704	Naftz, John	Oconto, Oconto	Flour	1896
1705	Oconto Brewing Co.....	Oconto, Oconto	Brewing and Malting	1891
1706	Oconto Company	Oconto, Oconto	Planing and Re-sawing.....	1865
1707	Oconto Company	Oconto, Oconto	Lumber, Lath and Shingles	1865
1708	Oconto Company Reporter.....	Oconto, Oconto	Publishing and Printing.....	1871
1709	Spies, Jacob	Oconto, Oconto	Planing Mill	1861
1710	Spies, Jacob	Oconto, Oconto	Mfg. Lumber	1859
1711	Falls Mfg. Co.....	Oconto Falls, Oconto.....	Paper Mill and Pulp Mill.....	1884
1712	Union Mfg. Co.....	Oconto Falls, Oconto.....	Mfrs. Lumber	1889
1713	Stearns, J. S., Lumber Co.....	Odanah, Ashland	Lumber, Lath and Shingles.....	1894
1714	Nichols, C. H., Lumber Co.....	Onalaska, La Crosse.....	Mfrs. of Lumber.....	1854
1715	Onalaska Brewing Co.....	Onalaska, La Crosse.....	Brewers	1894
1716	Dalles Milling Co, The.....	Osceola, Polk	Flour and Feed	1881
1717	Osceola Sun	Osceola, Polk	Publishers and Printers	1897
1718	Polk Co. Press, The.....	Osceola, Polk	Publishers and Printers	1860
1719	Allen & Weidner.....	Oshkosh	Publishers and Bookbinders.....	1867
1720	Arnold, W. T., & Co.....	Oshkosh	Laundry	1889
1720	Arnold, W. T., & Co.....	Oshkosh	Furniture and Refrigerators	1885
1722	Battis Bros.....	Oshkosh	Boilers, Tanks, etc.....	1858
1723	Becker, A. C.....	Oshkosh	Mfrs. Cigars	1884
1724	Brand, Robt., & Son.....	Oshkosh	Bank, Office and Saloon Fixt.....	1869
1725	Buckstaff Edwards Co.....	Oshkosh	Chairs and Coffins	1882
1726	Campbell & Cameron.....	Oshkosh	Planing Mill and Box Factory.....	1871
1727	Casket Hardware Co., The.....	Oshkosh	Casket Hardware, Silver Plating	1893
1728	Challoner, Geo., Sons Co., The.....	Oshkosh	Mfrs. Machinery	1863
1729	Choate, Hollister Furniture Co.....	Oshkosh	Furniture and Refrigerators.....	1894
1730	Citizens Traction Co.....	Oshkosh	Electric Railway	1896
1731	Clark, J. L.....	Oshkosh	Carriage Mfrs.	1881

27

Name of Firm.	Location.	Kind of Goods Made or Work Done.	Estab-lished.
1732 Conlee Lumber Co.....	Oshkosh	Lumber	1864
1733 Cook & Brown Co.....	Oshkosh	Mfr. Lime and Brick	1888
1734 Daves, Hansen & Co.....	Oshkosh	Pumps and Cylinders.....	1893
1735 Derksen & Peck.....	Oshkosh	Cigar Mfrs.	1887
1736 Diamond Match Co., The.....	Oshkosh	Match Manufacturing	1881
1737 Foote Cornish Milling Co., The.....	Oshkosh	Mfrs. Flour and Feed	1874
1738 Gillen Bros.	Oshkosh	Laundry	1888
1739 Globe Printing Co.....	Oshkosh	Printers	1895
1740 Gould Mfg. Co.....	Oshkosh	Lumber, Sash, Doors, etc.....	1869
1741 Gould Mfg. Co.....	Oshkosh	Mfrs. Lumber	1891
1742 Gustavus & Hintze.....	Oshkosh	Boiler Works	1890
1743 Hafner Lathman Mfg. Co.....	Oshkosh	Sash, Doors, Blinds	1890
1744 Hayes, E. B., Machine Co.....	Oshkosh	Wood Working Machinery	1893
1745 Hicks Printing Co., The.....	Oshkosh	Newspaper Publishers	1849
1746 Hollister, Amos, & Co.....	Oshkosh	Mfrs. Lumber	1882
1747 Kitz, M. M., & Son.....	Oshkosh	Cisterns and Cigar Boxes	1884
1748 Laabs, Ferdinand.....	Oshkosh	Flour, Feed and Meal.....	1880
1749 McMillen, R., & Co.....	Oshkosh, Winnebago Co.....	Lumber, Shingles and Lath.....	1865
1750 McMillen, R., & Co.....	Oshkosh, Winnebago Co.....	Sash, Doors, Blinds, etc.....	1865
1751 Mihlmann, A.	Oshkosh, Winnebago Co.....	Mfr. Cigars	1876
1752 Miller & Buck.	Oshkosh, Winnebago Co.....	Laundry	1888
1753 Morgan Mattress Co., The.....	Oshkosh, Winnebago Co.....	Mattress and Spring Bed Mfrs.....	1889
1754 Morgan Co., The.....	Oshkosh, Winnebago Co.....	Sash, Doors, Blinds, etc.....	1889
1755 Neville, T.	Oshkosh, Winnebago Co.....	Mfr. Carriages	1873
1756 Northwestern Sewer Pipe Co.....	Oshkosh, Winnebago Co.....	Soil and Sewer Pipe, etc.....	1884
1757 Oshkosh Brewing Co., The.....	Oshkosh, Winnebago Co.....	Brewing Beer	1894
1758 Oshkosh Clothing Mfg. Co.....	Oshkosh, Winnebago Co.....	Pants, Shirts and Overalls.....	1895
1759 Oshkosh Electric Light & Power Co.....	Oshkosh, Winnebago Co.....	Electric Lighting	1886
1760 Oshkosh Furniture Co.....	Oshkosh, Winnebago Co.....	Mfg. Furniture	1884
1761 Oshkosh Gas Light Co.....	Oshkosh, Winnebago Co.....	Mfrs. Gas and Electricity	1866
1762 Oshkosh Iron Works	Oshkosh, Winnebago Co.....	Machine Shop and Gen. Rep.....	1862
1763 Oshkosh Logging Tool Co.....	Oshkosh, Winnebago Co.....	Mfrs. Logging Tools.....	1887
1764 Oshkosh Paint Co.....	Oshkosh, Winnebago Co.....	Mfg. Paint	1896
1765 Oshkosh Pants Mfg. Co.....	Oshkosh, Winnebago Co.....	Mfrs. Working Men's Clothing.....	1897

1766	Oshkosh Plating Works.....	Oshkosh, Winnebago Co.....	Coffin Hardware and Metal Work.....	1895
1767	Oshkosh Water Works Co.....	Oshkosh, Winnebago Co.....	Supplying Water for City.....	1883
1768	Otto & Weber	Oshkosh, Winnebago Co.....	Mfrs. Cigars	1890
1769	Paine Lumber Co.....	Oshkosh, Winnebago Co.....	Lumber, Sash and Doors.....	1855
1770	Paine Lum. Co. Box Fcty. & Planing Mill.	Oshkosh, Winnebago Co.....	Mfrs. of Boxes	1855
1771	Paine Lum. Co., Saw Mill.....	Oshkosh, Winnebago Co.....	Mfrs. of Lumber	1855
1772	Palace Steam Laundry	Oshkosh, Winnebago Co.....	Laundry	1895
1773	Ransom, Perry	Oshkosh, Winnebago Co.....	Grinding and Polishing Mach.....	1867
1774	Radford Bros. & Co.....	Oshkosh, Winnebago Co.....	Lumber, Sash, Doors and Blinds.....	1878
1775	Rahr, Jr., Chas.....	Oshkosh, Winnebago Co.....	Brewing Beer	1865
1776	Sandford, A., Logging Tool Co.....	Oshkosh, Winnebago Co.....	Lumbermen's Tools, etc.....	1853
1777	Schmidt, H. P.....	Oshkosh, Winnebago Co.....	Mfrs. Flour	1833
1778	Schmit Bros., Trunk Co.....	Oshkosh, Winnebago Co.....	Trunks and Traveling Bags	1861
1779	Schneider, Louis.....	Oshkosh, Winnebago Co.....	Straw Covers for Bottles	1894
1780	Streich, A., & Bros.....	Oshkosh, Winnebago Co.....	Wagons and Dump Carts	1860
1781	Streich, Gabriel	Oshkosh, Winnebago Co.....	Wagons, Trucks and Carts	1870
1782	Thompson Carriage Co., Lt'd.....	Oshkosh, Winnebago Co.....	Buggies and Spring Wagons.....	1886
1783	Star Foundry & Machine Shop.....	Oshkosh, Winnebago Co.....	Foundry and Machine Shop.....	1881
1784	Troy Steam Laundry	Oshkosh, Winnebago Co.....	Laundry	1896
1785	Union Iron Works	Oshkosh, Winnebago Co.....	Gen. Foundry and Machine Shop.....	1886
1786	Viall, Edward & Co.....	Oshkosh, Winnebago Co.....	Printers and Publishers	1882
1787	Warwick & Cole Co., The.....	Oshkosh, Winnebago Co.....	Feed Mill and Grain El., Wood, Coal....	1888
1788	Weber Mfg. Co.....	Oshkosh, Winnebago Co.....	Mfrs. Dress Facing	1896
1789	Williamson & Libbey Lum. Co.....	Oshkosh, Winnebago Co.....	Lumber, Sash, Doors	1856
1790	Wilson, A.....	Oshkosh, Winnebago Co.....	Carriages and Spring Wagons.....	1876
1791	Wisconsin Art Glass Co.....	Oshkosh, Winnebago Co.....	Leaded, Beveled Plate Glass	1896
1792	Wisconsin Grass Twine Co.....	Oshkosh, Winnebago Co.....	Hay Twine, Matting, etc.....	1897
1793	Witzel & Goettmann.....	Oshkosh, Winnebago Co.....	Mfrs. Cigars	1883
1794	Park Falls Paper & Pulp Co.....	Park Falls, Price Co.....	Mfrs. Paper and Pulp.....	1895
1795	Jacobs & Co.....	Pashin Lake, Barron Co.....	Lumber and Shingles	1889
1796	Anderson, Ole	Peshtigo, Marinette Co.....	Planing Mill and Mfg. Building Lumber.	1895
1797	Perley Lowe Co.....	Peshtigo, Marinette Co.....	Planing and Re-sawing.....	1896
1798	Peshtigo Lumber Co., The.....	Peshtigo, Marinette Co.....	Lumber, Lath, Shingles.....	1868
1799	Peshtigo Lumber Co., The.....	Peshtigo Harbor, Marinette Co.....	Lumber, Lath, Shingles.....	1865
1800	Lawrence, P. R.....	Petersburg, Crawford Co.....	Lumber	1889
1801	Parvey, C. A.....	Petersburg, Crawford Co.....	Excelsior	1898
1802	Davids, John R.....	Phillips, Price Co.....	Mfrs. Lumber	1888

Name of Firm.	Location.	Kind of Goods Made or Work Done.	Estab-lished.
1803 Phillips Bee	Phillips, Price Co.....	Publishers and Printers	1884
1804 Phillips Times, The.....	Phillips, Price Co.....	Publishers and Printers	1876
1805 Shaw, Fayette	Phillips, Price Co.....	Non-Acid Hemlock Sole Leather.....	1893
1806 Grant Co. News.....	Platteville, Grant Co.....	Publishing and Printing	1884
1807 Grant Co. Witness	Platteville, Grant Co.....	Publishing and Printing	1856
1808 Harmann & Sons.....	Platteville, Grant Co.....	Mfg. Cigars	1884
1809 Hasbund, H. P.....	Platteville, Grant Co.....	Mfg. Flour	1876
1810 Laffin & Rand Powder Co.....	Platteville, Grant Co.....	Mfg. Powder	1846
1811 Mount City Broom Fcty.....	Platteville, Grant Co.....	Mfg. Brooms	1889
1812 Plapp, John D.....	Platteville, Grant Co.....	Cooperage, Cheese Boxes, etc.....	1891
1813 Platteville Brewery	Platteville, Grant Co.....	Brewers	1863
1814 Platteville Canning Co.....	Platteville, Grant Co.....	Canning Tomatoes, etc.....	1894
1815 Platteville Electric Light Co.....	Platteville, Grant Co.....	Light for City	1892
1816 Rickord Bros.	Platteville, Grant Co.....	Foundry	1878
1817 Sickles, M. S., & Co.....	Platteville, Grant Co.....	Mfg. Cigars	1874
1818 Snowden Bros.....	Platteville, Grant Co.....	Laundry	1892
1819 Weisse & Schroeder.....	Platteville, Grant Co.....	Feed Mill	1893
1820 Weeker Bros.....	Platteville, Grant Co.....	Saw, Grist and Feed Mill.....	1857
1821 Plum City Hard Wood Lum. Co.....	Plum City, Pierce Co.....	Hardwood Lumber	1890
1822 Sutter, H. & T.....	Plum City, Pierce Co.....	Hardwood Lumber	1893
1823 Center & Plymouth Roller Mills.....	Plymouth, Sheboygan Co.....	Flour, Corn Meal and Feed.....	1850
1824 Perfection Cash Registry Co.....	Plymouth, Sheboygan Co.....	Cash Registers	1895
1825 Plymouth Foundry Co.....	Plymouth, Sheboygan Co.....	Iron Castings	1897
1826 Plymouth Furniture Co.....	Plymouth, Sheboygan Co.....	Furniture	1886
1827 Plymouth Laundry	Plymouth, Sheboygan Co.....	Laundry	1895
1828 Plymouth Reporter, The	Plymouth, Sheboygan Co.....	Publishing and Printing	1872
1829 Schneider Bros.....	Plymouth, Sheboygan Co.....	Malsters and Mfg. Malt Coffee	1884
1830 Schram & Huson Chair Co.....	Plymouth, Sheboygan Co.....	Mfg. Chairs	1888
1831 Schreiner, A.....	Plymouth, Sheboygan Co.....	Malsters, Beer Bottling	1879
1832 Schwartz, Wm., Mfg. Co.....	Plymouth, Sheboygan Co.....	Book Cases, Kitchen Furn., etc.....	1892
1833 Thurman, F., Co.....	Plymouth, Sheboygan Co.....	Mfg. Seeders, etc., and Gen. Rep.....	1887
1834 Drier, Mike.....	Porcupine, Pepin Co.....	Hardwood Lumber	1895

1835	Edwards, John, Mfg. Co.....	Port Edwards, Wood Co.....	Lumber	1897
1836	Northwestern Lum. Co., The.....	Porter's Mill, Eau Claire Co.....	Lumber, Lath, Shingles, and Feed.....	1859
1837	Badger Underwear Co.....	Portage, Columbia Co.....	Mfg. Underwear	1891
1838	Breese Loomis & Co.....	Portage, Columbia Co.....	Mfg. Clothing	1868
1839	Buckley & Leisch	Portage, Columbia Co.....	Mfg. Clothing	1895
1840	C., M. & St. P. Ry.....	Portage, Columbia Co.....	Repair Shop	1863
1841	Epstein, Henry	Portage, Columbia Co.....	Beer	1875
1842	Eulburg Bros.....	Portage, Columbia Co.....	Beer	1884
1843	Falconer, Boynton Mfg. Co.....	Portage, Columbia Co.....	Shirts, Pants, Overalls.....	1892
1844	Portage Democrat	Portage, Columbia Co.....	Printers and Publishers	1876
1845	Portage Hosiery Co.....	Portage, Columbia Co.....	Hosiery	1881
1846	Portage Steam Laundry Co.....	Portage, Columbia Co.....	Laundry	1878
1847	Portage Underwear Co.....	Portage, Columbia Co.....	Mfg. Underwear	1888
1848	Wisconsin State Register	Portage, Columbia Co.....	Publishers and Printers.....	1853
1849	York, J. W.....	Portage, Columbia Co.....	Flour and Feed.....	1888
1850	Biedermann, G., & Co.....	Port Washington, Ozaukee Co.....	Brewers and Malsters	1881
1851	Borth Bros.....	Port Washington, Ozaukee Co.....	Cheese Boxes, Tables etc.....	1884
1852	Gilson Mfg. Co.....	Port Washington, Ozaukee Co.....	Foundry and Machinist	1851
1853	Guenther, S. G., & Son.....	Port Washington, Ozaukee Co.....	Brick and Tiles	1885
1854	Martin & Wesler	Port Washington, Ozaukee Co.....	Foundry	1848
1855	Mollinger & Prame Co.....	Port Washington, Ozaukee Co.....	Office Furniture.....	1884
1856	Mueller, C. A.....	Port Washington, Ozaukee Co.....	Mfg. Leather	1871
1857	Port Washington Steam Laundry.....	Port Washington, Ozaukee Co.....	Laundry	1897
1858	Schramke, John	Port Washington, Ozaukee Co.....	Mfg. Brick	1897
1859	Stelling, R.....	Port Washington, Ozaukee Co.....	Mfg. Flour	1883
1860	Western Malleable & Grey Iron Mfg. Co..	Port Washington, Ozaukee Co.....	Founders and Machinists.....	1871
1861	Wisconsin Chair Co., The.....	Port Washington, Ozaukee Co.....	Wood Seat and Upholstered Chairs	1888
1862	Moore & Keppel Co.....	Port Wing, Bayfield Co.....	Lumber	1895
1863	Runnoe, Isaac	Pound, Marinette, Co.....	Saw Mill	1892
1864	Horstfall, D. F.....	Prairie du Chien.....	Lumber	1892
1865	Hunting Elevator Co.....	Prairie du Chien.....	Grain Elevator	1884
1866	Inter State Packing Co.....	Prairie du Chien.....	Canning Vegetables	1889
1867	Keyes, Edward	Prairie du Chien.....	Honey Boxes	1898
1868	P. du Chien Butter Factory	Prairie du Chien.....	Butter and Cheese.....	1895
1869	P. du Chien Courier.....	Prairie du Chien.....	Printing and Publishing.....	1848
1870	P. du Chien Electric Light Co.....	Prairie du Chien.....	Light	1894
1871	P. du Chien Mfg. Co.....	Prairie du Chien.....	Cooperage	1890

Name of Firm.	Location.	Kind of Goods Made or Work Done.	Estab-lished.
1872 P. du Chien News	Prairie du Chien.....	Printing and Publishing	1864
1873 P. du Chien Steam Laundry.....	Prairie du Chien.....	Laundry	1895
1874 P. du Chien Woolen Mills.....	Prairie du Chien.....	Flannels	1891
1875 Schumann Menges Brewing Co.....	Prairie du Chien.....	Beer	1872
1876 Winiger, F.....	Prairie du Chien.....	Flour and Feed.....	1885
1877 Prentice Heading Co.....	Prentice, Price Co.....	Mfr. Heading	1894
1878 Prentice Tannery	Prentice, Price Co.....	Mfrs. Sole Leather.....	1891
1879 Quinnesec Falls Co.....	Quinnesec Falls, Marinette Co.....	Wood, Pulp and Paper	1888
1880 Adams, E. B., & Son.....	Racine, Racine Co.....	Bolster Springs and Wagon Jacks.....	1891
1881 Alshuler, Chas., Mfg. Co.....	Racine, Racine Co.....	Overalls and Shirts	1885
1882 Badger Electric Co.....	Racine, Racine Co.....	Suppling Light	1886
1883 Beebe Mfg. Co.....	Racine, Racine Co.....	Carriages and Wagons	1892
1884 Belle City Basket Co.....	Racine, Racine Co.....	Mfrs. of Baskets.....	1895
1885 Belle City Malleable Iron Co.....	Racine, Racine Co.....	Iron Castings and Wrought Iron.....	1893
1886 Belle City Mfg. Co.....	Racine, Racine Co.....	Mfrs. Agricultural Implements.....	1884
1887 Belle City Milling Co.....	Racine, Racine Co.....	Mfrs. Flour	1895
1888 Belle City St. R'y Co.....	Racine, Racine Co.....	Power and Lighting	1892
1889 Buse & Williams	Racine, Racine Co.....	Laundry	1887
1890 Cape, James & Son.....	Racine, Racine Co.....	Contractors of Public Wks.....	1882
1891 Carroll, Jos. C.....	Racine, Racine Co.....	Coal and Wood Yard	1895
1892 Case, J. I., Plow Wks.....	Racine, Racine Co.....	Mfrs. of Plows	1879
1893 Case, J. I., Threshing Mach. Co.....	Racine, Racine Co.....	Threshing Mach. and Gas Engines.....	1843
1894 Chicago Rubber Clothing Co.....	Racine, Racine Co.....	Rubber Clothing	1886
1895 Clancy, J. F., & Co.....	Racine, Racine Co.....	Coal and Wood Yard	1892
1896 Collier, T. P., Mfg. Co.....	Racine, Racine Co.....	Mangles and Bicycles	1892
1897 Common Sense Trunk Co.....	Racine, Racine Co.....	Mfrs. of Trunks	1888
1898 Dickey, A. P., Mfg. Co.....	Racine, Racine Co.....	Fanning Mills, etc.....	1885
1899 Domestic Steam Laundry	Racine, Racine Co.....	Laundry	1895
1900 Driver, T., & Sons Mfg. Co.....	Racine, Racine Co.....	Sash and Doors	1870
1901 Eisendrath Co., The B. D.....	Racine, Racine Co.....	Mfrs. of Leather	1886
1902 Emerson Linseed Oil Works.....	Racine, Racine Co.....	Linseed Oil and Oil Cake.....	1890
1903 Fish Bros. Wagon Co.....	Racine, Racine Co.....	Mfrs. of Wagons	1863
1904 Forster & Williams Mfg. Co.....	Racine, Racine Co.....	Agricultural Implements.....	1885

1905	Freeman & Sons Mfg. Co.....	Racine,	Racine Co.....	Agricultural Implements	1886
1906	Freeman & Sons Mfg. Co., The S.....	Racine,	Racine Co.....	Mfrs. of Boilers	1895
1907	Gold Medal Camp Furn. & Novelty Co....	Racine,	Racine Co.....	Camp and Folding Furniture, etc.....	1892
1908	Gunther Co., The.....	Racine,	Racine Co.....	Machine Shop	1866
1909	Gunther Co., The F. W.....	Racine,	Racine Co.....	White Fibre Sauerkraut.....	1882
1910	Hagman Steam Laundry	Racine,	Racine Co.....	Laundry	1885
1911	Hartman Trunk Co.....	Racine,	Racine Co.....	Trunks and Traveling Bags.....	1890
1912	Higgins, Ansted, Spring Co.....	Racine,	Racine Co.....	Carriage and Wagon Springs.....	1884
1913	Horicks Food Co.....	Racine,	Racine Co.....	Maliced Milk and Infants Food.....	1887
1914	Hunter Curry Comb Co.....	Racine,	Racine Co.....	Mfrs. Curry Combs.....	1895
1915	Hurlbut Co., The.....	Racine,	Racine Co.....	Brass and Iron Castings	1872
1916	Imperial Bit & Snap Co.....	Racine,	Racine Co.....	Saddlery and Wagon Hardware.....	1890
1917	Johnson & Field Co.....	Racine,	Racine Co.....	Fanning Mills, etc.....	1876
1918	Journal Printing Co., The.....	Racine,	Racine Co.....	Publishing and Printing	1856
1919	Klinkert, E.....	Racine,	Racine Co.....	Brewers	1875
1920	Lang Mfg. Co.....	Racine,	Racine Co.....	Machine Shop.....	1893
1921	Madson, A.....	Racine,	Racine Co.....	Sheepskin Tanners.....	1865
1922	Mfrs. Printing Co.....	Racine,	Racine Co.....	Printers and Publishers	1888
1923	Miller Co., The J.....	Racine,	Racine Co.....	Boots and Shoes.....	1872
1924	Mitchell & Lewis Co.....	Racine,	Racine Co.....	Mfrs. Wagons	1885
1925	Model Steam Laundry	Racine,	Racine Co.....	Laundry	1895
1926	Pease, E. H., Mfg. Co.....	Racine,	Racine Co.....	Mfrs. of Engines	1886
1927	Philbrook Shoe Co., The.....	Racine,	Racine Co.....	Mfrs. of Shoes and Packs	1872
1928	Platz, F., Sons Leather Co.....	Racine,	Racine Co.....	Mfrs. of Harness Leather	1860
1929	Pugh, W. H.....	Racine,	Racine Co.....	Coal and Wood Yard.....	1852
1930	Racine Basket Co.....	Racine,	Racine Co.....	Mfrs. Baskets	1869
1931	Racine Boat Mfg. Co.....	Racine,	Racine Co.....	Steel and Wood Boats and Engines.....	1890
1932	Racine Cement & Pipe Co.....	Racine,	Racine Co.....	Mfrs. Cement and Pipe	1883
1933	Racine Fire Engine Co.....	Racine,	Racine Co.....	Fire Engines, Hose Carts, etc.....	1893
1934	Racine Hardware Co.....	Racine,	Racine Co.....	Church and School Furniture.....	1874
1935	Racine Knitting Works.....	Racine,	Racine Co.....	Mfrs. Seamless Hosiery	1896
1936	Racine Mal. & Wrought Iron Co., The....	Racine,	Racine Co.....	Iron Castings and Specialties.....	1870
1937	Racine Nail & Tack Co.....	Racine,	Racine Co.....	Mfrs. Nails and Tacks	1890
1938	Racine Paper Box Co.....	Racine,	Racine Co.....	Mfrs. Paper Boxes	1893
1939	Racine Paper Goods Co.....	Racine,	Racine Co.....	Mfrs. Paper Specialties.....	1894
1940	Racine Planing Mill Mfg. Co.....	Racine,	Racine Co.....	Sash, Doors and Blinds	1892
1941	Racine Refrigerator Co.....	Racine,	Racine Co.....	Mfrs. Refrigerators	1879
1942	Racine Shoe Co.....	Racine,	Racine Co.....	Shoes .....	.....
1943	Racine Traveling Bag Co.....	Racine,	Racine Co.....	Traveling Bags and Suspenders	1890
1944	Racine Wagon & Carriage Co.....	Racine,	Racine Co.....	Mfrs. Wagons and Carriages	1869

Name of Firm.	Location.	Kind of Goods Made or Work Done.	Estab- lished.
1945 Racine Woolen Mills	Racine, Racine Co.....	Mfrs. of Woolens	1865
1946 Racine Yacht & Boat Works.....	Racine, Racine Co.....	Mfrs. of Boats	1895
1947 Racine Trunk Co.....	Racine, Racine Co.....	Mfrs. of Trunks	1890
1948 Roberts, John M.....	Racine, Racine Co.....	Mfrs. of Cut Stone	1881
1949 Roberts & Case	Racine, Racine Co.....	Flour and Feed	1892
1950 Secor, M. M. Trunk Co.....	Racine, Racine Co.....	Trunks and Traveling Bags.....	1861
1951 Stecher, Weber & Huetten Mfg. Co.....	Racine, Racine Co.....	Sash, Doors, Blinds and Planing Mill....	1876
1952 Times Publishing Co.....	Racine, Racine Co.....	Publishing and Printing	1884
1953 West Steam Laundry	Racine, Racine Co.....	Steam Laundry	1893
1954 Winship Mfg. Co., The.....	Racine, Racine Co.....	Pumps, Windmills and Tanks	1864
1955 Effinger, F.....	Reedsburg, Sauk Co.....	Brewers	1885
1956 Heaton, J. G.....	Reedsburg, Sauk Co.....	Mfrs. of Flour	1897
1957 Morgan Bldg. Co.....	Reedsburg, Sauk Co.....	Contractors	1881
1958 Reedsburg Buggy Co.....	Reedsburg, Sauk Co.....	Buggies and Carriages	1878
1959 Reedsburg Bldg. & Lumber Co.....	Reedsburg, Sauk Co.....	Contractors and Dealers in Lumber.....	1879
1960 Reedsburg Electric Light & Water Co....	Reedsburg, Sauk Co.....	Supplying Water and Light	1894
1961 Reedsburg Free Press	Reedsburg, Sauk Co.....	Printers and Publishers	1860
1967 Reedsburg Woolen Mills	Reedsburg, Sauk Co.....	Mfrs. of Woolen Cloth	1886
1963 Sanders, A. M.....	Reedsburg, Sauk Co.....	Wagons and Buggies	1886
1964 Schoephoester, William.....	Reedsburg, Sauk Co.....	Staves and Heading	1890
1965 Heberer & Kreuger	Reedsville, Manitowoc Co.....	Butter and Cheese	1896
1966 Martz Bros.....	Reedsville, Manitowoc Co.....	Grist Mill	1892
1967 Reedsville Mfg. Co.....	Reedsville, Manitowoc Co.....	Syrup and Nail Kegs, Ind. Clubs, etc....	1897
1968 Rusch, A. H.....	Reedsville, Manitowoc Co.....	Lumber and Planing Mill.....	1867
1969 Atlas Lumber Co.....	Rhineland, Oneida Co.....	White Pine Lumber.....	1895
1970 Brown Bros. Lumber Co.....	Rhineland, Oneida Co.....	Lumber, Lath and Shingles.....	1890
1971 Brown-Robbins, Lum. Co., The.....	Rhineland, Oneida Co.....	Lumber, Lath and Shingles.....	1888
1972 Clayton, George	Rhineland, Oneida Co.....	Lumber, Lath and Shingles.....	1887
1973 Conro, Abner, & Son.....	Rhineland, Oneida Co.....	Mfrs. of Lumber.....	1882
1974 Fall, H. J., & Co.....	Rhineland, Oneida Co.....	Lumber, Lath and Shingles.....	1893
1975 Faust Electric Light Co.....	Rhineland, Oneida Co.....	Electric Lighting	1890
1976 Herald Pub. Co., The.....	Rhineland, Oneida Co.....	Publishers and Printers.....	1884
1977 Kirk, James S., Co.....	Rhineland, Oneida Co.....	Mfrs. of Boxes	1893
1978 Marquardt, M.....	Rhineland, Oneida Co.....	Mfrs. of Cigars	1894

1979	Model Steam Laundry.....	Rhineland, Oneida Co.....	Steam Laundry	1895
1980	New North, The.....	Rhineland, Oneida Co.....	Publishers and Printers.....	1882
1981	Rhineland Iron Co.....	Rhineland, Oneida Co.....	Saw Mill Machinery.....	1884
1982	Rib River Lumber Co.....	Rhineland, Oneida Co.....	Mfrs. of Lumber.....	1892
1983	Soo Planing Mill Co.....	Rhineland, Oneida Co.....	Custom Planing	1889
1984	Stevens Lumber Co.....	Rhineland, Oneida Co.....	Lumber, Lath and Shingles.....	1889
1985	Vindicator, The.....	Rhineland, Oneida Co.....	Publishers and Printers.....	1886
1986	Wabash Screen Door Co.....	Rhineland, Oneida Co.....	Screen Doors and Windows.....	1885
1987	Wilson & Bronson	Rhineland, Oneida Co.....	Lumber and Custom Planing Mill.....	1892
1988	Kennedy, J. J.....	Rib Lake, Taylor.....	Lumber, Lath and Shingles.....	1881
1989	Shaw, Fayette.....	Rib Lake, Taylor.....	Non-acid Hemlock Sole Leather.....	1892
1990	Hintz, F. J.....	Rib Lake, Taylor.....	Lumber and Shingles.....	1898
1991	Kennedy, J. J.....	Rib Lake, Taylor.....	Lumber, Lath and Shingles.....	1898
1992	Hatten & Co.....	Rice Lake, Barron.....	Mfrs. Barrel Stock.....	1886
1993	Mercier, C.....	Rice Lake, Barron.....	Mfrs. Lumber	1892
1994	Rice Lake Lumber Co.....	Rice Lake, Barron.....	Lumber, Lath and Shingles.....	1881
1995	Rice Lake Mfg. Co.....	Rice Lake, Barron.....	Sash and Doors and Contractors.....	1893
1996	Reuter Hub & Spoke Co.....	Rice Lake, Barron.....	Mfrs. Hubs and Spokes.....	1886
1997	Clay Lumber Co.....	Ringle, Marathon	Mfg. Lumber	1888
1998	Clay Lumber Co.....	Ringle, Marathon	Mfg. Brick	1892
1999	The Commonwealth	Ripon	Printing and Publishing	1863
2000	Powers, J. J.....	Ripon	Cold Storage	1891
2001	Ripon Light & Water Co.....	Ripon	Light and Water	1891
2002	Ripon Steam Laundry.....	Ripon	Laundry	1896
2003	Scheafer, W. E.....	Ripon	Foundry	1882
2004	Bouten & Germain Co.....	Ripon	Gloves and Mittens.....	1897
2005	Crowther, W. S., & Co.....	Ripon	Flour and Feed.....	1891
2006	Haas, John.....	Ripon	Mfg. Beer	1865
2007	Ripon Knitting Works.....	Ripon	Hosiery, Gloves and Mittens.....	1883
2008	Zinzon Bros. Mfg. Co.....	Ripon	Interior Woodwork	1896
2009	Timms, C. J.....	Ripon	Berry Boxes	1885
2010	Wicks & Sons.....	Ripon	Farm Implements	1883
2011	Lind, A. W.....	River Falls, Pierce.....	Carriages, Wagons, etc.....	1881
2012	Vanvoorhis & Co.....	River Falls, Pierce.....	Flour and Feed.....	1896
2013	Churchill, F. B.....	Rock Elm, Pierce.....	Mfrs. Hardwood	1893
2014	Hahn, Chas. A., & Sons.....	Rock Elm, Pierce.....	Hardwood Lumber	1867
2015	Partridge, L., & Decker Bros.....	Rock Elm, Pierce.....	Hardwood Lumber	1887
2016	Brimer Bros. Co.....	Richland Center	Flannels	1890
2017	C. O. D. Laundry.....	Richland Center	Laundry	1895

Name of Firm.		Location.	Kind of Goods Made or Work Done.	Estab- lished.
2018	Fries, John C.....	Richland Center	Cooperage	1889
2019	Krauskop, A. H.....	Richland Center	Lumber	1891
2020	Parfry, A. C.....	Richland Center	Lumber and Excelsior.....	1896
2021	Parfry, A. C.....	Richland Center	Flour and Feed.....	1881
2022	James, N. L.....	Richland Center	Lumber	1881
2023	Strong, George H.....	Richland Center	Elec. Light	1895
2024	Republican Observer.....	Richland Center	Printing and Publishing.....	1855
2025	Richland Rustic.....	Richland Center	Printing and Publishing.....	1877
2026	Sampson, O. L.....	Sanborn, Ashland Co.....	Shingles and Heading.....	1892
2027	Defer, J. J.....	Saxon, Iron Co.....	Lumber, Heading and Shingles.....	1897
2028	Kastemeyer, Wm.	Schlessingerville, Wash. Co.....	Mfrs. Brick	1882
2029	Rosenheimer, L.	Schlessingerville, Wash. Co.....	Mfrs. Brick	1887
2030	Stark, Charles	Schlessingerville, Wash. Co.....	Brewers and Malsters.....	...
2031	Brooks & Ross Lumber Co.....	Schofield, Marathon Co.....	Lumber, Lath, Shingles and Pickets....	1884
2032	Hillary & Co.....	Shullsburg, Lafayette Co.....	Feed Mill	1884
2033	Pick and Gad	Shullsburg, Lafayette Co.....	Publishers and Printers.....	1852
2034	Dean, F. H.....	Seymour, Outagamie Co.....	Mfrs. Stump Pullers.....	1896
2035	Northwestern Mfgr. Co.....	Seymour, Outagamie Co.....	Lumber	1886
2036	Seymour Press	Seymour, Outagamie Co.....	Publishers and Printers.....	1886
2037	Seymour Wooden Ware Co.....	Seymour, Outagamie Co.....	Mfrs. Mooden Ware	1897
2038	Stewart Bros.	Seymour, Outagamie Co.....	Mfgr. Flour and Feed.....	1878
2039	Kast, F. W.....	Shawano, Shawano Co.....	Mfgr. Flour and Feed.....	1865
2040	Nachtway & Beventz	Shawano, Shawano Co.....	Planing Mill and Machine Shop.....	1897
2041	Madison Lumber Co.....	Shawano, Shawano Co.....	Mfg. Lumber	1893
2042	Raddant, Emil T.....	Shawano, Shawano Co.....	Brewers and Maltsters.....	1883
2043	Shawano Steam Laundry.....	Shawano, Shawano Co.....	Laundry	1896
2044	Wolf River Paper & Fibre Co.....	Shawano, Shawano Co.....	Mfg. Wood Pulp.....	1894
2045	Aladdin Soap Co.....	Sheboygan, Sheboygan Co.....	Mfrs. of Soap.....	1891
2046	American Folding Bed Factory.....	Sheboygan, Sheboygan Co.....	Mfrs. Folding Beds.....	1893
2047	American Mfg. Co.....	Sheboygan, Sheboygan Co.....	Mfrs. of Chairs.....	1887
2048	Balzer, John	Sheboygan, Sheboygan Co.....	Mfrs. Wagons and Carriages.....	1854
2049	Big Hat Steam Laundry Co.....	Sheboygan, Sheboygan Co.....	Laundry	1892

2050	Bort, P. D.	Sheboygan,	Sheboygan Co.	Laundry	1888
2051	Columbia Shoe Co.	Sheboygan,	Sheboygan Co.	Mfr. Boots, Shoes and Slippers	1893
2052	Crocker Chair Factory, Plant A.	Sheboygan,	Sheboygan Co.	Mfrs. of Chairs	1887
2053	Crocker Chair Co., Plant B.	Sheboygan,	Sheboygan Co.	Mfrs. of Chairs	1884
2054	Demokrat Ptg. Co.	Sheboygan,	Sheboygan Co.	Newspaper, Books, and Job Ptg.	1857
2055	Dillingham Mfg. Co.	Sheboygan,	Sheboygan Co.	Mfr. of Refrigerators & Wooden Ware	1884
2056	Dungan & Hanford	Sheboygan,	Sheboygan Co.	Mfr. Cigars	1887
2057	Excelsior Wrapper Co.	Sheboygan,	Sheboygan Co.	Mfrs. Bottle Wrappers	1888
2058	Freyberg, C. B., & Bros.	Sheboygan,	Sheboygan Co.	Planing Mill	1876
2059	Frost Veneer Seatina Co.	Sheboygan,	Sheboygan Co.	Mfrs. Railroad Cars and Depot Seating	1883
2060	Grafton Toy Co.	Sheboygan,	Sheboygan Co.	Mfrs. Toys and Express Wagons	1879
2061	Geele Hardware Co.	Sheboygan,	Sheboygan Co.	Mfrs. Hardware	1860
2062	Hutsch Brewing Co.	Sheboygan,	Sheboygan Co.	Brewers	1845
2063	Howe, L. K.	Sheboygan,	Sheboygan Co.	Printing and Publisher	1866
2064	Illinois Leather Co.	Sheboygan,	Sheboygan Co.	Cleaning and Drying Hair	1895
2065	Jenkins Machine Co.	Sheboygan,	Sheboygan Co.	Mfrs. of Machinery	1876
2066	Jung, J. & W.	Sheboygan,	Sheboygan Co.	Mfrs. High Grade Carriages	1859
2067	Kolker, Heyssen & Stehn Mfg. Co.	Sheboygan,	Sheboygan Co.	Enameled Ware and Agri. Implements	1879
2068	Mattoon Mfg. Co.	Sheboygan,	Sheboygan Co.	Mfrs. Furniture	1881
2069	Meyer, Phil., Co.	Sheboygan,	Sheboygan Co.	Machine Shop and Foundry	1893
2070	Meyers Machine Shops	Sheboygan,	Sheboygan Co.	Machine Repairing	1887
2071	Mueller, H. G., & Sons	Sheboygan,	Sheboygan Co.	Planing Mill and Cheese Boxes	1892
2072	Musical Instrument Mfg. Co.	Sheboygan,	Sheboygan Co.	Mfrs. Musical Instruments	1884
2073	Optenberg & Sonneemann	Sheboygan,	Sheboygan Co.	Mfrs. Engines and Boilers	1880
2074	Patt, A. W.	Sheboygan,	Sheboygan Co.	Publishers and Printers	1880
2075	Reiss Coal Co.	Sheboygan,	Sheboygan Co.	Coal, Wood and Salt	1880
2076	Roentiz Leather Co.	Sheboygan,	Sheboygan Co.	Mfrs. of Leather	1853
2077	Phoenix Chair Co.	Sheboygan,	Sheboygan Co.	Mfrs. of Chairs	1875
2078	Schreier Konrad Co.	Sheboygan,	Sheboygan Co.	Brewers	1854
2079	Schultheiss Bros.	Sheboygan,	Sheboygan Co.	Iron Workers	1886
2080	Sheboygan Brick & Tile Co.	Sheboygan,	Sheboygan Co.	Mfrs. Brick and Tile	1889
2081	Sheboygan Chair Co.	Sheboygan,	Sheboygan Co.	Mfrs. of Chairs	1869
2082	Sheboygan Cigar Mold Co.	Sheboygan,	Sheboygan Co.	Mfrs. of Cigar Molds	1892
2083	Sheboygan Coal Co.	Sheboygan,	Sheboygan Co.	Dealers in Coal and Wood	1888
2084	Sheboygan Co. News	Sheboygan,	Sheboygan Co.	Printers and Publishers	1879
2085	Sheboygan Co. Journal	Sheboygan,	Sheboygan Co.	Newspaper Publishers	1880
2086	Sheboygan Knitting Co.	Sheboygan,	Sheboygan Co.	Knit Goods	1880
2087	Sheboygan Light & Railway Co.	Sheboygan,	Sheboygan Co.	Electric Light Motor P. & S. R.	1895
2088	Sheboygan Mineral Water Co.	Sheboygan,	Sheboygan Co.	Bottlers of Mineral Water	1881
2089	Sheboygan Novelty Works	Sheboygan,	Sheboygan Co.	Book Cases, Cabinets, etc.	1890
2090	Sheboygan Volksblatt Co.	Sheboygan,	Sheboygan Co.	Pub. of Newspaper	1895

Name of Firm.	Location.	Kind of Goods Made or Work Done.	Estab- lished.
2091 Spratt, Geo., & Co.....	Sheboygan, Sheboygan Co.....	Mfrs. of Chairs.....	1884
2092 Vollarth Mfg. Co.....	Sheboygan, Sheboygan Co.....	Mfrs. Iron Ware and Bath Tubs.....	1875
2093 Winter Lumber Co.....	Sheboygan, Sheboygan Co.....	Mfrs. Hall Racks and Fixtures.....	1888
2094 Zimmerman, E. F. W.....	Sheboygan, Sheboygan Co.....	Booksellers and Binders.....	1874
2095 Zschetzsche & Son.....	Sheboygan, Sheboygan Co.....	Mfrs. Leather.....	1874
2096 Zurherde Brick Co.....	Sheboygan, Sheboygan Co.....	Mfrs. Brick.....	1887
2097 Brichner Woolen Mills Co.....	Sheboygan, Sheboygan Co.....	Mfrs. Woolen Cloth.....	1878
2098 Richardson Bros.....	Sheboygan, Sheboygan Co.....	Mfrs. Cheese Boxes and Chairs.....	1856
2099 Search Mfg. Co.....	Sheboygan, Sheboygan Co.....	Mfrs. Agri. Implements.....	1896
2100 Sheboygan Falls Tannery.....	Sheboygan Falls, Sheboygan Co.....	Mfr. of Leather.....	1868
2101 Shell Lake Lumber Co.....	Shell Lake, Washburn Co.....	Lumber, Lath and Shingles.....	1881
2102 Shiocton Lumber Co.....	Shiocton, Outagamie Co.....	Lumber, Lath and Shingles.....	1892
2103 Soyson, P. U.....	Shiocton, Outagamie Co.....	Flour and Grain Elevators.....	1897
2104 Mills & Le Clair Lumber Co.....	South Range, Douglas Co.....	Lumber.....	....
2105 Newton, O. I., & Sons Co.....	Sparta, Monroe Co.....	Wrapping Paper.....	1868
2106 Sparta Iron Works Co.....	Sparta, Monroe Co.....	Mfrs. Iron Castings.....	1858
2107 Brown, L. A.....	Spring Valley, Pierce Co.....	Hardwood Lumber.....	1895
2108 S. Valley Spoke and Heading Co.....	Spring Valley, Pierce Co.....	Spokes and Heading.....	....
2109 John Staadt Lumber Co.....	Staadt, Marathon Co.....	Lumber.....	1890
2110 Northwestern Lumber Co.....	Stanley, Chippewa Co.....	Lumber, Lath and Shingles.....	1892
2111 Stanley Mfg. Co.....	Stanley, Chippewa Co.....	Slack Barrel Heading.....	1893
2112 Stanley Republican.....	Stanley, Chippewa Co.....	Publishers and Printers.....	1896
2113 U. S. Leather Co.....	Stanley, Chippewa Co.....	Mfrs. Sole Leather.....	1895
2114 Williams & Salsech.....	Star Lake, Vilas Co.....	Lumber, Lath and Shingles.....	1894
2115 Inter-state Park Mills.....	St. Croix Falls, Polk Co.....	Flour and Feed.....	1895
2116 Seery & Messer.....	St. Croix Falls, Polk Co.....	Mfrs. Heading.....	1886
2117 Seery & Co.....	St. Croix Falls, Polk Co.....	Mfrs. Lumber.....	1894
2118 Wall, S. J.....	St. Croix Falls, Polk Co.....	Planing Lumber.....	1894
2119 Wanhardt, I. P.....	St. Croix Falls, Polk Co.....	Planing Lumber.....	1881

2120	Blake & Co.	Stevens Point, Portage Co.	Mfrs. of Hosiery	1898
2121	Central City Iron Works.	Stevens Point, Portage Co.	Mfrs. Mill Machinery	1890
2122	Hoeffler Mfg. Co.	Stevens Point, Portage Co.	Carriages and Potato Planters	1889
2123	Jackson Milling Co.	Stevens Point, Portage Co.	Mfrs. Flour and Feed	1877
2124	Kuenzel, G.	Stevens Point, Portage Co.	Mfr. of Beer	1897
2125	Mitchell, W. W.	Stevens Point, Portage Co.	Flour and Lumber	1878
2126	Pfiffner & Rounds Co.	Stevens Point, Portage Co.	Mfrs. Lumber	1891
2127	Rice & Bro. Co.	Stevens Point, Portage Co.	Founders and Machinists	1868
2128	South Side Lumber Co.	Stevens Point, Portage Co.	Mfrs. Lumber	.....
2129	Stevens Pt. Box Co.	Stevens Point, Portage Co.	Mfrs. of Boxes	1893
2130	Stevens Point Journal	Stevens Point, Portage Co.	Publishers and Printers	1873
2131	Vetter, H. A., Mfg. Co.	Stevens Point, Portage Co.	Sash and Doors	1893
2132	Week Lumber Co.	Stevens Point, Portage Co.	Lumber, Lath and Shingles	1851
2133	Wis. Central Ry. Shops	Stevens Point, Portage Co.	Repair Shops	1870
2134	Anson Eldred Co.	Stiles, Oconto Co.	Mfgs. Lumber	1853
2135	Blakeslee, J.	Stoughton, Dane Co.	Feed Mill and G. Elevator	1867
2136	Diamond Laundry	Stoughton, Dane Co.	Laundry	1894
2137	Hintze, C. M.	Stoughton, Dane Co.	Mfrs. Cigars	1881
2138	Stoughton Wagon Co.	Stoughton, Dane Co.	Mfrs. Wagons and Sleighs	1865
2139	Connor, R., Co.	Stratford, Marathon Co.	Mfrs. Lumber	1891
2140	Connor, R., Co.	Stratford, Marathon Co.	Planing Mill	1895
2141	Morrison & Miller	Stratford, Marathon Co.	Mfrs. Lumber	1890
2142	Bickdahl, H. M.	Soldiers' Grove, Crawford Co.	Tobacco (sorting)	1893
2143	Kickapoo Excelsior Co.	Soldiers' Grove, Crawford Co.	Excelsior	1892
2144	Peterson, Atley	Soldiers' Grove, Crawford Co.	Lumber	1868
2145	Soldiers' Grove Stave Co.	Soldiers' Grove, Crawford Co.	Staves	1898
2146	Marsh, Jos. C.	Spokeville, Clark Co.	Lumber	1885
2147	Ellingson Bros.	Stetsonville, Taylor Co.	Lumber and Shingles	1892
2148	Hurlburt, J. J.	Steubin	Lumber	1888
2149	Sauk City Canning Co.	Sauk City	Canning Vegetables	1895
2150	Miss. River Logging Co.	Strickland, Chippewa Co.	Mfrs. Lumber	.....
2151	Miss. River Logging Co.	Strickland, Chippewa Co.	Lumber, Lath and Shingles	.....
2152	Kerckhoffer, Henry	Sugar Bush, Outagamie Co.	Mfrs. Shingles	1896
2153	Advocate, The	Sturgeon Bay, Door Co.	Publishers and Printers	1862
2154	Brown, W. O., Mfg. Co.	Sturgeon Bay, Door Co.	Mfrs. Shingles	1892

Name of Firm.	Location.	Kind of Goods Made or Work Done.	Estab-lished.
2155 Door County Democrat.....	Sturgeon Bay, Door Co.....	Publishers and Printers.....	1892
2156 Ives Bros.	Sturgeon Bay, Door Co.....	Founders and Machinists.....	1886
2157 Lawson, L. A.....	Sturgeon Bay, Door Co.....	Mfrs. Furniture.....	1896
2158 Baugratz Lumber Co.....	Sturgeon Bay, Door Co.....	Shingles, Lath and Lumber.....	1892
2159 Reynolds Preserving Co.....	Sturgeon Bay, Door Co.....	Canning Peas.....	1896
2160 Riebold & Walthers & Co.....	Sturgeon Bay, Door Co.....	Boat Builders and Repairers.....	1856
2161 Shaw & Torkeldsen.....	Sturgeon Bay, Door Co.....	Grist Mill and Mfg. Shingles.....	1885
2162 Sturgeon Bay Electric Light Co.....	Sturgeon Bay, Door Co.....	Electric Light.....	1891
2163 Washburn, N.....	Sturgeon Bay, Door Co.....	Planing Mill.....	1890
2164 Anchor Mill Co.....	Superior.....	Mfrs. of Flour.....	1893
2165 Belt Line Elevator Co.....	Superior.....	Grain Elevator.....	1893
2166 Daisy Roller Mills, The.....	Superior.....	Mfrs. of Flour.....	1893
2167 C., S. P., M. & O. Ry.....	Superior.....	Repair Shops.....	1894
2168 Hardwood Mfg. Co., The.....	Superior.....	Mfrs. of Barrels.....	1891
2169 Listman, William, Milling Co., The.....	Superior.....	Mfrs. of Flour.....	1893
2170 Northern P. R'y Co. Shops.....	Superior.....	R'y Shops.....	1890
2171 Superior Co-operative Barrel Co.....	Superior.....	Mfrs. of Barrels.....	1895
2172 Superior Terminal Elevator Co.....	Superior.....	Grain Elevator.....	1893
2173 Duplex Mfg. Co.....	South Superior.....	Wind Mills and Pumps.....	1892
2174 Webster Mfg. Co.....	South Superior.....	Chairs and Hardwood Lumber.....	1891
2175 Adamant Mfg. Co.....	West Superior.....	Adamant Plaster.....	1889
2176 American Steel Barge Co.....	West Superior.....	Steel, Metal Ships and Engines.....	1890
2177 Arnold & Schimmel.....	West Superior.....	Heavy Sheet Iron Work.....	1892
2178 Bagley & McNaughton.....	West Superior.....	Confectionery.....	1891
2179 Barker, C. S.....	West Superior.....	General Contractor.....	1867
2180 Bingham Bros.....	West Superior.....	Roofing & Cornice Works.....	1888
2181 Blatz, V., Brewing Co., Branch Office.....	West Superior.....	Brewing Co.....	1890
2182 Broadway Laundry.....	West Superior.....	Laundry.....	1887
2183 Burdick Mfg. Co.....	West Superior.....	Heavy Sheet Iron and Copper.....	1890
2184 Burke, J. A.....	West Superior.....	R'y and General Contractor.....	1887
2185 Carlson Bros.....	West Superior.....	Tin, Copper & Sheet Iron Wk.....	1891
2186 Clements, F. V., & Co.....	West Superior.....	Cigars.....	1893
2187 Clithero Coal & Lumber Co.....	West Superior.....	Coal and Lumber Dealers.....	1890
2188 Commander Flour Milling Co.....	West Superior.....	Mfrs. Flour.....	.....

2189	Cowie Bros.	West Superior	Sash and Doors	1895
2190	Dowd Sons & Co.	West Superior	Mfrs. Barrels	1857
2191	Douglas County Dairy	West Superior	Dairy	1889
2192	Eastern R'y of Minnesota	West Superior	Repair Shops	1888
2193	Eastern R'y of Minn., Flour Dock	West Superior	Freight	1889
2194	Edwards, W. C., Lumber Co.	West Superior	Wholesale and Retail Lumber Yard	1890
2195	Eimon Mercantile Co.	West Superior	Storage	1895
2196	Enterprise Laundry Co.	West Superior	Laundry	1897
2197	Evening Telegram Co.	West Superior	Publishers and Printers	1890
2198	Fitzsimmons-Derrig Co.	West Superior	Storage	1889
2199	Freeman Milling Co.	West Superior	Mfrs. of Flour	1894
2200	Gem Steam Laundry, The	West Superior	Laundry	1891
2201	Globe Elevator Co.	West Superior	Grain Elevator	1887
2202	Great Northern Bottling Works	West Superior	Mfrs. of Soda Water	1891
2203	Gregg, F. B.	West Superior	Publishers and Printers	1886
2204	Great Northern Elevator Co., The	West Superior	Grain Elevator	1886
2205	Gund, John, Brewing Co. of La Crosse	West Superior	Beer Storage Warehouse	1890
2206	Harmon-Whipple Co., The	West Superior	Printers	1892
2207	I. X. L. Roofing & Cornice Works	West Superior	Mfrs. of Cornice	1890
2208	Klinkert Brewing Co., The	West Superior	Mfrs. of Beer	1890
2209	Kloster & Lange	West Superior	Retail Lumber Yard	1896
2210	Lake Superior Fur Co.	West Superior	Mfrs. of Fur Garments	1894
2211	Lake Superior Supply Co.	West Superior	Retail Wood & Coal Yd.	1891
2212	Lehigh Coal & Coke Co.	West Superior	Coal and Coke	1886
2213	Lehigh Valley Coal Co., The	West Superior	Coal Dealers	1895
2214	Mankato Milling Co.	West Superior	Flour	1893
2215	Marx, Fred C.	West Superior	Cigars	1892
2216	Mast, R. C.	West Superior	Mfrs. of Books	1890
2217	McCord Lumber Co.	West Superior	Band Sawed Lumber	1896
2218	McDonlad & Taylor	West Superior	Mfrs. of Wagons	1891
2219	McKenzie, Arris	West Superior	Contractors	1892
2220	Miller, Fred, Brewing Co.	West Superior	Beer Storage	1883
2221	Middleton Mfg. Co.	West Superior	Publishers and Printers	.....
2222	Neil & Co.	West Superior	Plumbers and Fitters	1889
2223	Northwestern Coal R'y Co.	West Superior	Storage and Handling of Coal	1895
2224	Northwestern Fuel Co., The	West Superior	Shippers of Coal	1888
2225	Northwestern Machine Works	West Superior	Machine Shop	1896
2226	Northwestern Pants Mfg. Co.	West Superior	Mfrs. of Pants	1897
2227	Ohio Coal Co.	West Superior	Dealers in Coal	1889
2228	Orenstein, James, & Co.	West Superior	Practical Furriers	1897

Name of Firm.	Location.	Kind of Goods Made or Work Done.	Estab-lished.
2229 Penn, William, & Co.....	West Superior	Cut Stone	1889
2230 Penn. Coal, Dray & Storage Co.....	West Superior	Dray and Storage	1897
2231 Peyton, Kimball & Barber.....	West Superior	Mfrs. of Lumber.....	1884
2232 Phil. & Reading Coal & Iron Co.....	West Superior	Dealers of Coal.....	1890
2233 Pioneer Carriage Co.....	West Superior	Carriages and Repairing.....	1893
2234 Roberts, G. W.....	West Superior	Sheet Iron Work.....	1889
2235 Rohl Bros.....	West Superior	Bottlers of Water and Beer.....	1893
2236 Russell & Miller Milling Co.....	West Superior	Mfrs. of Flour.....	1893
2237 Schmidt & Schaible.....	West Superior	Mfrs. of Cigars.....	1895
2238 Stack Bros.....	West Superior	Plumbers	1892
2239 Strothman Iron Works.....	West Superior	Foundry, Machine Shop.....	1888
2240 Star Co-operative Barrel Co.....	West Superior	Mfrs. of Barrels.....	1897
2241 Superior Broom Co.....	West Superior	Mfrs. of Brooms.....	1892
2242 Standard Oil Co.....	West Superior	Handling Oils	1889
2243 St. Paul & Western Coal Co.....	West Superior	Coal Dealers	1888
2244 Superior Citizen, The.....	West Superior	Publishers and Printers .....	....
2245 Superior Creamery Co., The.....	West Superior	Creamery	1894
2246 Superior Cycle Co.....	West Superior	Mfrs. of Bicycles	1896
2247 Superior Iron Works.....	West Superior	Foundry and Machinist.....	1896
2248 Superior Laundry	West Superior	Laundry	1891
2249 Superior Rapid Transit R'y Co.....	West Superior	Street Railway	1889
2250 Superior Supply & Fuel Co.....	West Superior	Building Material and Fuel.....	1892
2251 Superior Tidende, The.....	West Superior	Publishing and Printers.....	1892
2252 Superior Trunk & Harness Factory.....	West Superior	Mfrs. Trunks and Harness.....	1890
2253 Superior Warehouse Co.....	West Superior	Freight and Storage.....	1893
2254 Superior Water, Light & Power Co.....	West Superior	City Water and Light Supply	1887
2255 Swift & Co., Branch House.....	West Superior	Dealers in Meats.....	1893
2256 Tait Storage & Salt Co.....	West Superior	Storage	1896
2257 Thompson, H. O.....	West Superior	Mfrs. Harness	1888
2258 Twohy Mercantile Co.....	West Superior	Mfrs. of Bluing	1889
2259 Walsh, W. P.....	West Superior	General Contractor	1888
2260 Warehouse & Builders' Supply Co.....	West Superior	Lime, Builders' Supplies	1889
2261 Wendland Bros.....	West Superior	Sheet Iron Work.....	1897
2262 West Superior Bay Co.....	West Superior	Mfrs. of Bags.....	1894
2263 West Superior Bedding Co.....	West Superior	Mattresses, Pillows, Wire Springs.....	1897

2264	West Superior Brewing Co.....	West Superior	Mfrs. of Beer.....	1889
2265	West Superior Iron & Steel Co.....	West Superior	Iron and Steel.....	1888
2266	West Superior Lumber Co.....	West Superior	Mfrs. Lumber	1890
2267	West Superior Wood Working Co.....	West Superior	Mfrs. Sash and Doors.....	1890
2268	Whitney Bros.	West Superior	General Contractors	1891
2269	Youghiogheny & Lehigh Coal Co.....	West Superior	Coal Dealers	1893
2270	Goodyear, P. A.....	Tomah, Monroe Co.....	Mfr. Lumber, Lath, Shingles.....	1894
2271	Bangor Lumber Company.....	Tomahawk	Mfrs. Lumber, Lath and Shingles.....	1897
2272	Bay Mill Company.....	Tomahawk	Mfrs. Lumber, Lath and Shingles.....	1892
2273	Bradley Company	Tomahawk	Planing Lumber	1896
2274	Crane Bros.	Tomahawk	Mfrs. Lumber	1890
2275	Packers Box Company.....	Tomahawk	Mfrs. Box Shooks.....	1895
2276	Rice Bros. Box Company.....	Tomahawk	Mfrs. Box Shooks.....	1897
2277	Rice River Lumber Company.....	Tomahawk	Dealers in Logs and Lumber.....	1892
2278	Somo Lumber Company.....	Tomahawk	Mfrs. Lumber	1889
2279	Tomahawk Iron Works.....	Tomahawk	Mfrs. Mill Machinery.....	.....
2280	Tomahawk Pulp & Paper Company.....	Tomahawk	Mfrs. Pulp Paper	1888
2281	Lake Shore Lumber Co., The.....	Tomahawk Lake, Vilas.....	Lumber, Lath, Shingles.....	1892
2282	Bergand Madison Badger Lumber Co.....	Tigerton, Shawano Co.....	Mfrs. Lumber and Shingles.....	1894
2283	Tigerton Lumber Company.....	Tigerton, Shawano Co.....	Mfrs. Lumber, Shingles.....	1892
2284	Wall & Spaulding.....	Tigerton, Shawano Co.....	Mfr. Lumber	1884
2285	Aluminum Mfg. Co.....	Two Rivers, Manitowoc.....	Mfg. Aluminum Combs.....	1895
2286	Eggers, F.	Two Rivers, Manitowoc.....	Mfg. Veneer Seating	1886
2287	Hamilton Mfg. Company.....	Two Rivers, Manitowoc.....	Mfg. Woodtype and Printers' Furniture	1881
2288	Mueller Bros.	Two Rivers, Manitowoc.....	Brewers and Maltsters.....	1848
2289	Schroeder Bros.	Two Rivers, Manitowoc.....	Mfg. Flour	1878
2290	Two Rivers Mfg. Company, No. 1.....	Two Rivers, Manitowoc.....	Mfr. Lumber and Wood Work for Pails	1855
2291	Two Rivers Mfg. Company, No. 2.....	Two Rivers, Manitowoc.....	Mfg. Pails and Tubs.....	1855
2292	Two Rivers Mfg. Company, No. 3.....	Two Rivers, Manitowoc.....	Mfg. Chairs	1855
2293	Union Panel Mfg. Company.....	Town of Union Pierce Co.....	Mfr. of Rotary Cut Basswood.....	1892
2294	Veefkind Mfg. Co., Henry B.....	Veefkind, Clark Co.....	Mfrg. Staves and Heading.....	1891
2295	Rudesil Estate, Saw Mill.....	Viking P. O.....	Mfrg. Hardwood Lumber	1883
2296	Vernon County Censor	Viroqua, Wis.....	Edt. News Paper and Job Printing ...	1856
2297	Viroqua Steam Laundry	Viroqua	Laundry	1897
2298	Warren Company, George.....	Warren, Monroe Co.....	Mfrs. Lumber, Lath, Window Frames...	1868

FACTORY INSPECTION.

Name of Firm.	Location.	Kind of Goods Made or Work Done.	Estab-lished.
2299 Bigelow & Co., A. A.	Washburn, Bayfield Co.	Mfrg. Lumber, Lath and Shingles.	1886
2300 Kenfield & Lamoreaux.	Washburn, Bayfield Co.	Mfrs. Heading and Lumber and Shingles	1894
2301 Northwestern Fuel Company.	Washburn, Bayfield Co.	Coal Dealers	1897
2302 Nye Jenks & Company.	Washburn Bayfield Co.	Grain Elevators	1890
2303 South Shore Lumber Company.	Washburn, Bayfield Co.	Mfrg. Lumber	1890
2304 Thompson Lumber Company.	Washburn, Bayfield Co.	Mfrg. Lumber	1887
2305 C., St. P., M. & O. R'y.	Washburn, Bayfield Co.	Storage	1890
2306 Roach & Seeber Company.	Waterloo, Jefferson Co.	Mfrg. Butter, and Handle Grain.	1884
2307 Rood & Son.	Waterloo, Jefferson Co.	Feed Mill	1895
2308 Spies, John	Waterloo, Jefferson Co.	Mfrg. Pearl Buttons	1891
2309 Waterloo Monumental Works	Waterloo, Jefferson Co.	Granite and Marble Works.	1895
2310 Badger State Bottling Company.	Watertown, Jefferson Co.	Mfrg. Carbonated Beverages.	1868
2311 Blessuns Table Slide Co., The	Watertown, Jefferson Co.	Mfrg. Table Covers	1889
2312 Edward Brandt & Dent. Co., The J.	Watertown, Jefferson Co.	Mfrg. Gas Fixtures	1890
2313 Buchelt Malting Co., Wm.	Watertown, Jefferson Co.	Malting	1889
2314 Cordes & Co., L. H.	Watertown, Jefferson Co.	Mfrg. Bricks	1882
2315 Eagle Mills.	Watertown, Jefferson Co.	Flour and Feed	1881
2316 Farnbrook, Jas.	Watertown, Jefferson Co.	Mfrg. Shipping Grates, Bee Hives.	1881
2317 Fuermann Brewing Company.	Watertown, Jefferson Co.	Brewers and Malsters	1849
2318 Gazette, The.	Watertown, Jefferson Co.	Publishing and Printing	1854
2319 Globe Milling Co., Empire Mills.	Watertown, Jefferson Co.	Flour and Feed	1871
2320 Hartig, Wm.	Watertown, Jefferson Co.	Brewers and Malsters	1884
2321 Kramer & Neuman.	Watertown, Jefferson Co.	Mfrg. Cigars	1883
2322 Kunert Mfg. Co., The E.	Watertown, Jefferson Co.	Founders and Machinists.	1875
2323 Lewis, G. B. Company.	Watertown, Jefferson Co.	Mfrg. Bee Keepers Supplies	1869
2324 Miller, A. F.	Watertown, Jefferson Co.	Mfrg. Cigars	1861
2325 Missigates & Co., F.	Watertown, Jefferson Co.	Mfrg. Sash Door and Blinds	1895
2326 Quentmeyer & Vaugh.	Watertown, Jefferson Co.	Mfrg. Brick	1881
2327 Schlueter Bros.	Watertown, Jefferson Co.	Mfrg. Cigars	1879
2328 Watertown Electric Light Co.	Watertown, Jefferson Co.	Electric Light for City	1889
2329 Watertown Gas Company.	Watertown, Jefferson Co.	Gas for City	1858
2330 Watertown Mfrg. Company.	Watertown, Jefferson Co.	Boiler, Foundry and Machine Shops.	1888
2331 Watertown Republican.	Watertown, Jefferson Co.	Publishing and Job Printing.	1861
2332 Watertown Shoe Company.	Watertown, Jefferson Co.	Mfrg. Shoes.	1886

2333	Watertown Steam Laundry.....	Watertown, Jefferson Co.....	Laundry	1886
2334	Watertown Weldbuerger, German.....	Watertown, Jefferson Co.....	Publishing and Printing	1853
2335	Wiggenhorn Bros.	Watertown, Jefferson Co.....	Mfrg. Tobacco and Cigars.....	1858
2336	Welkowski Bros	Watertown, Jefferson Co.....	Mfrg. Cigars	1882
2337	Woodard & Stone.....	Watertown, Jefferson Co.....	Mfrg. Cracker and Confectionery.....	1867
2338	Empire Milling Company.....	Whitewater, Walworth Co.....	Mfrg. Flour and Feed	1852
2339	Klinger, N.....	Whitewater, Walworth Co.....	Brewer	1864
2340	Waite, C. M.....	Whitewater, Walworth Co.....	Mfrg. Sash, Doors and Blinds	1866
2341	Whitewater Electric Light Company.....	Whitewater, Walworth Co.....	Electric Light for City	1890
2342	Whitewater Register	Whitewater, Walworth Co.....	Publishing and Printing.....	1857
2343	Whitewater Robe Tanning Co.....	Whitewater, Walworth Co.....	Tan Hides for Garments	1896
2344	Whitewater Steam Laundry	Whitewater, Walworth Co.....	Laundry	1892
2345	Evans, J. W.....	Waupaca, Waupaca Co.....	Mfrg. Woolen Cloths	1867
2346	Hansen, Andrew M.....	Waupaca, Waupaca Co.....	Mfrg. Lumber	1893
2347	Nelson, A. G.....	Waupaca, Waupaca Co.....	Planing Lumber, Sash.....	.....
2348	Roberts & Oborn.....	Waupaca, Waupaca Co.....	Mfrgs. Flour and Feed	1884
2349	Rosche, T. W.....	Waupaca, Waupaca Co.....	Foundry	1892
2350	Sheaver & Jardme	Waupaca, Waupaca Co.....	Planing Mill	1857
2351	Waupaca Electric Light Co.....	Waupaca, Waupaca Co.....	Electric Lighting	1886
2352	Waupaca City Water Works.....	Waupaca, Waupaca Co.....	City Water	1897
2353	Waupaca Post, The.....	Waupaca, Waupaca Co.....	Printers and Publishers.....	1874
2354	Waupaca Record.....	Waupaca, Waupaca Co.....	Publishers and Printers	1894
2355	Waupaca Starch and Potato Company....	Waupaca, Waupaca Co.....	Mfrs. Starch	1890
2356	Waupaca Steam Laundry.....	Waupaca, Waupaca Co.....	Steam Laundry	1892
2357	Wells, Andrew S.....	Waupaca, Waupaca Co.....	Mfrg. Feed	1891
2358	Althose, Wheeler & Company	Waupun	Mfrg. Wind Mills	1894
2359	Henry, Ira L.....	Waupun	Mfrg. Paper Boxes and canes.....	1884
2360	Hinnis Markle & Company.....	Waupun	Mfrg. Flour and Feed.....	1870
2361	Maxon & Olds	Waupun	Mfrg. Cigars	1870
2362	Olson & Nelson	Waupun	Mfrg. Plows and Agri. Imp.....	1891
2363	Shaler Hartgernik Company.....	Waupun	Mfrg. Umbrellas and Canes	1892
2364	Zimmerman, F. F.....	Waupun	Mfrg. Buggies, Carriages and Sleighs....	1867
2365	Zoeller Bros. & Hull.....	Waupun	Mfrg. Flour and Feed	1890
2366	Wisconsin State Prison.....	Waupun	Clothing	1893
2367	Wells, M. D., & Co.....	Waupun	Shoe Uppers	1874
2368	Wells, M. D., & Co.....	Waupun	Boots and Shoes	1874
2369	State Prison	Waupun	Knitting	1893
2370	Morris, J. S.....	Waupun	Carriages and Sleighs	1874

Name of Firm.	Location.	Kind of Goods Made or Work Done.	Estab-lished.
2371 Waupun Leader	Waupun	Printing and Publishing .....	....
2372 Barker & Steward	Wausau, Marathon Co.	Lumber, Lath and Shingles.....	1886
2373 Brodie, James	Wausau, Marathon Co.	Tannery	1896
2374 Builer & Berkholder	Wausau, Marathon Co.	Cigars	1887
2375 Central Wisconsin, The.....	Wausau, Marathon Co.	Printers and Publishers	1857
2376 Curtis & Yale Co.	Wausau, Marathon Co.	Sash, Doors, Blinds, etc.	1881
2377 Daily Record, The.....	Wausau, Marathon Co.	Printers and Publishers.....	1876
2378 Fenzel, John A.	Wausau, Marathon Co.	Repairing Machinery	1877
2379 Goodwillis Bros. Co.	Wausau, Marathon Co.	Boxes and Box Shooks	1889
2380 Kickbusch Roller Flour Mills.....	Wausau, Marathon Co.	Flour and Feed	1885
2381 Kickbusch, F. W.	Wausau, Marathon Co.	Flour and Feed	1882
2382 Kryshak, A. L.	Wausau, Marathon Co.	Cigars	1891
2383 Lipman & Slimmer Co.	Wausau, Marathon Co.	Hardwood Lumber	1893
2384 Mathe Brewery	Wausau, Marathon Co.	Lager Beer	1869
2385 McEchron, H. E.	Wausau, Marathon Co.	Flour and Feed	1886
2386 Mortenson, J., Lumber Co.	Wausau, Marathon Co.	Lumber, Lath and Shingles.....	1892
2387 Murray, D. J., Mfg. Co.	Wausau, Marathon Co.	Machinery	1875
2388 Jawarth, Fred & Son	Wausau, Marathon Co.	Mfrs. Buggies, Sleighs, etc.	1872
2389 Ritter & Deutsch	Wausau, Marathon Co.	Office Fixt. and Furniture	1884
2390 Ruder, Geo., Brewing Co.	Wausau, Marathon Co.	Lager Beer	1860
2391 Schwentkofske, Aug.	Wausau, Marathon Co.	Carpenter and Builder	1897
2392 Steward, Alex., Lbr. Co.	Wausau, Marathon Co.	Lumber, Lath and Shingles.....	1884
2393 Underwood Veneer Co.	Wausau, Marathon Co.	Veneering	1893
2394 Wausau Box & Lbr. Co.	Wausau, Marathon Co.	Box Shooks	1892
2395 Wausau Boom Co.	Wausau, Marathon Co.	Handling Logs	1871
2396 Wausau Electric Co.	Wausau, Marathon Co.	Electric Lighting	1889
2397 Wausau Excelsior Co.	Wausau, Marathon Co.	Excelsior	1891
2398 Wausau Novelty Co.	Wausau, Marathon Co.	Furniture and Novelties	1895
2399 Wausau Herold, The.....	Wausau, Marathon Co.	Printers and Publishers	1893
2400 Wausau Pilot	Wausau, Marathon Co.	Printers and Publishers	1865
2401 Wausau Rolling Mills	Wausau, Marathon Co.	Flour and Feed	1893
2402 Wausau Water Works	Wausau, Marathon Co.	City Water Supply	1885
2403 Werhelm Mfg. Co.	Wausau, Marathon Co.	Sash, Doors and Blinds	1884
2404 Wausau Wochenblatt	Wausau, Marathon Co.	Eng. and German Job Printing	1870

2405	Manson, R. P.....	Wausau, Marathon Co.....	Lumber and Shingles.....	1885
2406	Bird & Wells Lumber Co.....	Wausaukee, Marinette Co.....	Lumber, Lath and Shingles.....	1888
2407	Beldenville Lumber Co.....	Waverly, Pierce Co.....	Hardwood Lumber	1891
2408	Wagner, M. B.....	Webber, Marathon Co.....	Lumber	1888
2409	Krieger, Henry.....	West Bend, Washington Co.....	Harness	1892
2410	Schmidt & Stark.....	West Bend, Washington Co.....	Wagons, Spokes and Fellows.....	1892
2411	Silberzohn Mfg. Co.....	West Bend, Washington Co.....	Agricultural Implements.....	1879
2412	Silver Lake Ice Co.....	West Bend, Washington Co.....	Flour and Electric Light	1892
2413	Washington Co. Pub. Co.....	West Bend, Washington Co.....	Printing and Publishing	1853
2414	West Bend Brewing Co.....	West Bend, Washington Co.....	Beer and Malt	1882
2415	Mostal, Anton, & Co.....	West Bend, Washington Co.....	Pearl Buttons	1895
2416	Thorsen, Thos., & Co.....	Westby	Planing, Lbr. and Feed.....	1885
2417	Baeton, John	West Depere, Brown Co.....	Brick	1889
2418	Baeton, Leonard	West Depere, Brown Co.....	Brick	1890
2419	Hoeker, John	West Depere, Brown Co.....	Brick	1857
2420	Roofers, John	West Depere, Brown Co.....	Brick	1887
2421	Laanen, Van, Arnold.....	West Depere, Brown Co.....	Brick	1892
2422	Badger Basket Mfg. Co.....	Weyauwega, Waupaca Co.....	Baskets	1885
2423	Weed & Gumaer Mfg. Co.....	Weyauwega, Waupaca Co.....	Lumber	1855
2424	Weed & Gumaer Mfg. Co.....	Weyauwega, Waupaca Co.....	Flour and Feed	1855
2425	Weyauwega Elec. Light Co.....	Weyauwega, Waupaca Co.....	Light	1895
2426	Hull, G. F.....	Whitcomb, Shawano Co.....	Saw Mill.....	1895
2427	Whitcomb Lbr. Co.....	Whitcomb, Shawano Co.....	Lumber	1885
2428	Wisconsin River Paper & Pulp Co.....	Whiting, Portage County.....	Mfrg. News Paper.....	1891
2429	Plover Paper Company.....	Whiting, Portage County.....	Mfrg. Fine Writing Paper	1894
2430	Monford Saw Mill & Bending Wks., A. J.....	Wildwood, Pierce County.....	Mfrgs. Lumber Wagons.....	1897
2431	Aggen, J. D.....	Wittenberg, Shawano County.....	Flour and Feed	1887
2432	Gralley Herman F.....	Three miles south of Wittenberg.....	Mfrg. Lumber and Planing Mill.....	1882
2433	Holmes & Smith	Wittenberg, Shawano County.....	Mfrg. Lumber	1887
2434	Shawano Lumber Company	Wittenberg, Shawano County.....	Mfrg. Lumber, Lath and Shingles.....	1881
2435	Wittenberg Veneer & Panel Co.....	Wittenberg, Shawano County.....	Mfg. Veneer	1896
2436	Wood, Geo. E.....	Woodboro, Oneida County	Mfrg. Lumber, Lath and Shingles.....	1892
2437	Bethesda Brewery.....	Waukesha, Waukesha Co.....	Brewers Malsters and Bottlers.....	1864
2438	Almanaris Company, The.....	Waukesha, Waukesha Co.....	Mfrg. Ginger Ale and Phosphate.....	1892

Name of Firm.	Location.	Kind of Goods Made or Work Done.	Estab- lished.
2439 Bethesda Mineral Spring Co.....	Waukesha, Waukesha Co.....	Mfrg. Ginger Ale, Soda Water, etc.....	1878
2440 Blair Bros.....	Waukesha, Waukesha Co.....	Founders and Machinists.....	1886
2441 Dodd, Samuel.....	Waukesha, Waukesha Co.....	Sash, Doors, Blinds and Contracting.....	1870
2442 Henk Mineral Spring & Bottling Co.....	Waukesha, Waukesha Co.....	Mfrg. Ginger Ale and Bottlers.....	1881
2443 Imperial Spring Brewing Co.....	Waukesha, Waukesha Co.....	Brewers and Bottlers.....	1893
2444 Kent Lubricant Company.....	Waukesha, Waukesha Co.....	Mfrg. Grease.....	1892
2445 Silurian Mineral Spring Water.....	Waukesha, Waukesha Co.....	Mfrg. Ginger Ale, Cherry Phosphate.....	1879
2446 Spring City Steam Laundry.....	Waukesha, Waukesha Co.....	Laundry.....	1894
2447 Waukesha American Gas Co.....	Waukesha, Waukesha Co.....	Light for City.....	1885
2448 Waukesha Arcadia Company, The.....	Waukesha, Waukesha Co.....	Ginger Ale and Cherry Phosphate.....	1885
2449 Waukesha County Democrat, The.....	Waukesha, Waukesha Co.....	Publishing.....	1852
2450 Waukesha Dispatch, The.....	Waukesha, Waukesha Co.....	Publishing.....	1891
2451 Waukesha Electric Light Company.....	Waukesha, Waukesha Co.....	Lighting City.....	1886
2452 Waukesha Freeman, The.....	Waukesha, Waukesha Co.....	Publishing and Printing.....	1869
2453 Waukesha Hazel Pure Water Co.....	Waukesha, Waukesha Co.....	Manufacture Carbonated Water.....	1897
2454 Waukesha Lithia Spring Co.....	Waukesha, Waukesha Co.....	Bottling Mineral Water.....	1892
2455 Waukesha Malleable Iron Works.....	Waukesha, Waukesha Co.....	Mfrg. Malleable Iron Castings.....	1894
2456 Waukesha Mfrg. Company.....	Waukesha, Waukesha Co.....	Mfrg. Weather Strips.....	1894
2457 White Rock Mineral Spring Co.....	Waukesha, Waukesha Co.....	Bottles of Mineral Waters and Gin. Ale.....	1884
2458 Waukesha Steam Laundry.....	Waukesha, Waukesha Co.....	Laundry.....	1888
2459 Waukesha Water Co.....	Waukesha, Waukesha Co.....	Bottlers of Mineral Waters.....	1890
2460 Waukesha Water Works.....	Waukesha, Waukesha Co.....	Supplying Water.....	1897
2461 Wisconsin Central Ry. Shops.....	Waukesha, Waukesha Co.....	Car and Locomotive Mfrg.....	1886
2462 Wauzeka Lumber Co.....	Wauzeka.....	Excelsior.....	1890
2463 Wauzeka Lumber Co.....	Wauzeka.....	Lumber.....	1890
2464 Wauzeka Roller Mills.....	Wauzeka.....	Flour and Feed.....	1891

ORDERS ISSUED.

It was said in the beginning of this part that the duties coming under the term "Factory Inspection" really consist of enforcing the laws which regulates the condition in factories and workshops; that the work of inspection, while incidental to this is necessary in order to discover violations; and that the first step taken towards enforcing these laws consist of a formal notice or order to this effect, in which the nature of the violation as well as of the remedy to be applied are specified.

From February, 1897, to about September 1st, 1898, 844 such order were made. Most of these were readily complied with. Others will be complied with in the near future, and a few, in which our authority is disputed, will probably require further proceedings.

The above orders were issued in cases where the laws were directly violated. It should not be understood, however, that this is the only way in which greater safety to employees have been brought about through the factory inspectors. There are many factories and work shops in which the condition as a whole or part is such that while it is a menace to the health and safety of the employees it does not come within any of the provisions of the factory laws. In such cases the inspectors have, of course, no authority to act or to compel changes. By calling the operator's attention to the condition and suggesting remedies the inspectors often succeed in bringing about improvements of the greatest value to the health and safety of the operators. There are also many other ways in which the inspectors have been of great service outside of what, strictly speaking, may be termed their regular duties. While all work of this nature is fully reported to this Bureau and a part of its record, it does not come within the factory laws and is therefore excluded in this report.

The orders thus made for improvements in the condition in factories and workshops are presented with considerable detail in the following pages. The number given opposite each order indicate the establishment which it effects. Thus, if in reading

the orders, one wishes to find the establishment on which it was made, all that is necessary to do is to turn to the same number in the "Index to Establishments" and there read the name of the establishment in question. This arrangement was made in order to save space or the duplication of names.

While an attempt has been made in the following table to classify the orders according to their nature, or, the purpose for which they were issued, this classification is not in all cases complete. This is because of the character of this work. In many cases, for instance, guards, which are mainly intended as a protection against some one dangerous part of a machine and so classified, also serve the same purpose for other parts, which while dangerous, are not specified. On the whole, however, the classification as it stands gives a fairly accurate idea of the character of the changes or improvements ordered.

CLASSIFICATION OF ORDERS MADE.

Classification.	Number of orders.
Safety Guards on Flywheels.....	192
Safety Guards on Edge Saws.....	9
Safety Guards on Band Saws.....	9
Safety Guards on Shaftings.....	9
Safety Guards on Pulleys.....	65
Safety Guards on Gearing.....	43
Safety Guards on Set Screws.....	29
Safety Guards on Belings.....	85
Safety Guards on Machinery.....	46
Safety Guards on Stairways.....	32
Safety Guards on Floor Openings.....	12
Safety Guards on Elevators.....	26
Connections between engine room and shop.....	41
Doors to swing out.....	6
Children under 14 years of age.....	150
Fire escapes.....	26
Miscellaneous.....	64
Total.....	844

This table shows that in all 844 orders were issued. Of these 528 or 62.46 per cent. were for safety guards of one kind or another on machinery or parts thereof; 150 or 17.70 per cent were for the discharge of children which had been found to be under 14 year of age; 76 or 9.04 per cent were for guards on stairs, elevators and other openings; 64 or 7.72 per cent were for changes which could not be conveniently classified and therefore called miscellaneous; and 26 orders or a trifle over 3 per cent. of the whole were for fire escapes.

Many of these orders, however, represent more than one appliance or change. It often happened that in the same establishment separate guards or appliances were needed for several pieces of machinery of the same kind. While this simply amounted to that many changes, they were all included in one order and therefore counted as one order only in the above table. Instances of this kind are found in each case or class. Thus the 192 orders issued for the guarding of fly wheels provide for guards for over three hundred such wheels. Another example may be found in the case of children. While in this case only 150 orders are shown, these ordered the dismissal from work of 327 children who were under 14 years of age. The number of safety appliances provided or the number of cases in which operators have been made to comply with the factory laws are therefore much greater than the number of the orders issued.

Orders for changes or improvements on churches, school houses, halls, etc., are in each case shown in connection with the report of their inspection.

- 9 One child under age discharged. Complied with.
- 16 Three children under age discharged. Complied with.
- 20 Four children under age discharged. Complied with.
- 27 Three children under age discharged. Complied with.
- 32 Doors swing out. One child under age discharged.
- 42 One child under age discharged. Complied with.
- 49 Band saw boxed. Complied with.
- 53 One child under age discharged. Complied with.
- 103 One child under age discharged. Complied with.
- 98 One child under age discharged. Complied with.
- 107 Five children under age discharged. Complied with.
- 122 Doors swing outward, fire escape. One child under age discharged.
- 147 One child under age discharged. Complied with.
- 156 One child under age discharged. Complied with.
- 161 One child under age discharged. Complied with.
- 171 Twelve children under age discharged. Complied with.
- 196 One child under age discharged. Complied with.
- 223 One child under age discharged. Complied with.
- 229 One child under age discharged. Complied with.
- 234 Fly wheel guarded. Complied with.
- 246 One child under age discharged. Complied with.
- 252 One child under age discharged. Complied with.
- 259 Boy discharged. Complied with.
- 271 One child under age discharged. Complied with.
- 277 Four children under age discharged. Complied with.
- 293 Band saw boxed. Complied with.
- 296 Fire escape. Complied with.
- 300 Three children under age discharged. Complied with.
- 315 Fire escapes. Two children under age discharged.
- 320 Two fire escapes and fly wheel guarded. Complied with.
- 318 Band saw and drive belt boxed and hole covered. Complied with.
- 317 Eight children under age discharged. Complied with.

- 319 Two children under age discharged. Complied with.
 330 New guard for fly wheel. Complied with.
 331 Doors swing out, elevator shaft guarded; hand rails on stairways. Complied with.
 349 Three children under age discharged. Complied with.
 361 Two boys discharged. One child under age discharged. Complied with.
 375 One child under age discharged. Complied with.
 388 One child under age discharged. Complied with.
 390 One child under age discharged. Complied with.
 401 Two children under age discharged. Complied with.
 404 One child under age discharged. Complied with.
 433 One child under age discharged. Complied with.
 438 Fire escapes.
 438 Split saw boxed.
 449 Hand rails. Complied with.
 454 Wire netting to fence fly wheel.
 462 Seven children under age discharged. Complied with.
 464 Four children under age discharged. Complied with.
 488 Three children under age discharged. Complied with.
 508 Fence fly wheel, guard elevator shaft.
 509 Band saws boxed.
 518 Suggested ventilator in center of shop in shape of funnel with pipe out of roof. Complied with.
 518 Two children under age discharged. Complied with.
 519 One child under age discharged. Complied with.
 520 Doors to swing out.
 532 One child under age discharged. Complied with.
 535 Fire escapes. Three children under age discharged.
 539 Drive belt boxed. Complied with. Two children under age discharged.
 549 One child under age discharged. Complied with.
 560 Four children under age discharged. Complied with.
 571 Two children under age discharged. Complied with.
 590 Fire escape. Removed.
 550 Fence fly and wheel and belt on engine.
 591 One child under age discharged. Complied with.
 600 Fly and balance wheels fenced. Complied with.
 604 Four children under age discharged. Complied with.
 616 One child under age discharged. Complied with.
 678 Fly wheel, lumber conveyor and pulley guarded. Complied with.
 681 Fly wheel and main belt guarded and connections from engine room to mill. Complied with.
 759 Front end of all machines guarded.
 665 Main drive belt boxed. Complied with.
 657 All live gears covered, large gear in saw mill covered, fly wheel guarded. Complied with.
 653 Child under age discharged. Complied with.
 647 Two fly wheels on engine guarded. Complied with.
 672 Fly wheel fenced. Complied with.
 687 Fly wheel guarded.
 688 Two fly wheels guarded and four fly wheels to small engine guarded.
 690 Connection from engine room to work shop, fly wheel and pulley guarded.
 696 Connecting rod to No. 2 engine, main belt and large pulley guarded. Complied with.
 699 New stairs, fly wheel guarded.
 697 Railing on log slide and fly wheel guarded.
 700 South end of fly wheel guarded, railing on stairs used for oiling, railing on log slide. Complied with.
 704 Fly wheel boxed, end of fly wheel shaft boxed, end of surfacers guarded, planer and matching machine guarded and also pulleys and belts.
 705 Fly wheel and pulley guarded, gearing boxed, set screws covered, railing on log slide, guard on edger.
 706 Belt to band saw guarded.

- 710 One child under age discharged. Complied with.
- 722 Fly wheel fenced. Complied with.
- 749 Two children under age discharged. Complied with.
- 751 Band saw boxed. Complied with.
- 756 Railing on log slide, counter shaft guarded.
- 760 Connections from boiler room and engine to wash house. Complied with.
- 789 Fly wheel fenced.
- 890 Fly wheel and drive belt fenced.
- 825 Main belt guarded. Complied with.
- 829 Fly wheel fenced, signal for engine room. Complied with.
- 840 Railing around engine. Complied with.
- 842 Fly wheel, elevator guards and engine room signals. Complied with.
- 763 Connection from engine room to machine shops. Complied with.
- 764 Fly wheel guarded. Complied with.
- 775 Child under age discharged.
- 777 Fly and balance wheel fenced. Complied with.
- 793 Fly wheel and pulley fenced. Complied with.
- 802 Four pulleys on grind stone fenced. Complied with.
- 824 Fly wheel and large gear boxed, gears to live rolls boxed, set screws and couplings boxed, bull wheel and pulleys to bull wheel covered, pulleys to carriage boxed, rope and gears to saw trimmers boxed, gear to saw-dust conveyor boxed and ordered elbow put on exhaust pipe. Complied with.
- 844 Balance wheel on engine fenced. Complied with.
- 845 Fly and balance wheel fenced.
- 850 Fly wheel fenced and holes in second story floor fenced. Complied with.
- 851 Railing in front of fly wheel, guards on moulding machines, guards on counter shaft. Complied with.
- 856 Fly wheel fenced. Complied with.
- 864 Fly wheel fenced. Complied with.
- 870 Pulleys and belts boxed, gear to sticker machine guarded.
- 880 Fly wheel and sides fenced. Complied with.
- 907 Four children under age discharged.
- 913 Fly wheel guarded. Complied with.
- 919 Stair openings guarded.
- 926 Railing on 2nd and 3rd floor to elevator, lower end of band saw boxed, belt on second floor guarded, new stairway with railing to engine room, fly wheel and connecting rod to engine guarded, connection from engine room to work shop. Complied with.
- 930 Drive belt fenced, hand rail on stairs. Complied with.
- 941 Front end of all machines covered in planing mill, set screws covered, main belt and pulley guarded in engine room. Complied with.
- 943 Fly wheel guarded. Complied with.
- 944 Fly wheel guarded.
- 945 Fly wheel guarded and two boys under age discharged.
- 946 Fly wheel guarded and band saw boxed.
- 949 Fly wheel fenced. Complied with.
- 955 Fly wheel and belt fenced. Complied with.
- 965 One child under age discharged. Complied with.
- 966 Railing on stairway, gear to rollers, saw to butting machine guarded, pulley to feed gear covered, wheel on edger boxed, belt to bull wheel boxed. Complied with.
- 967 Railing on lower floor of water mill. Complied with.
- 968 Front end of all machines in planing mill covered, arm of engine guarded.
- 972 Gears to saw dust elevators covered, rotary saw guarded, bull wheels guarded, front end of five machines guarded and pulleys boxed.
- 981 Two nuts on molding machine covered, two on matcher covered, two fly wheels and connecting rod guarded, connection from engine room to work shop. Complied with.
- 984 Fly wheel guarded. Complied with.
- 987 Shafting covered. Complied with.
- 991 Gear to water wheel covered. Complied with.
- 996 Automatic gates on elevator. Complied with.

- 997 Fly wheel and two gears guarded. Complied with.
- 999 Set screws on pony planer boxed, slasher saws guarded, gear to Duplex machine guarded, gears to printing press and hopping machine guarded, two children under age discharged. Complied with.
- 1000 Fly wheels and belt guarded, floor openings fenced. Complied with.
- 1004 Gear to gang rip saw covered, gear to resaw guarded, belt on elevator gear covered and railing placed around friction pulley, connection from engine room to mill. Complied with.
- 1005 Two children under age discharged. Complied with.
- 1009 Connection rod on engine guarded, set screws to moulding machines covered, front end of moulding machines guarded, planer and loading shaft guarded. Complied with.
- 1010 End of fly wheel guarded, side of line shaft guarded, hole in floor guarded, new board placed in grove of cutoff, saw friction pulleys guarded, new box for chain to wood saw, all set keys covered. Complied with.
- 1011 Railing repaired, new steps, edging slasher guarded. One child under age discharged. Complied with.
- 1014 Fly wheel guarded, connection from engine room to factory. Complied with.
- 1016 Fly wheel fenced. Complied with.
- 1017 Fly wheel and pulley fenced. Complied with.
- 1018 Fly wheel fenced. Complied with.
- 1023 Fly wheels fenced, keys on shafting boxed, all drive belts and pulleys on planer guarded. Destroyed by fire.
- 1026 Fly wheel and pulleys guarded.
- 1028 Fly wheel and balance wheel fenced.
- 1032 Fly wheel guarded. Complied with.
- 1036 Fly wheel and pulley guarded, fly wheel of main engine guarded, drive wheel and pulley to veneer machine guarded. Complied with.
- 1037 Pulley boxed on circular saw, fly wheel guarded. Complied with.
- 1038 Boy discharged under age. Complied with.
- 1046 Fly wheel and top of trimmer saw guarded, railing on log slide, set screws covered, front end of all machines guarded. Complied with.
- 1047 Fly wheel guarded.
- 1048 Fly wheel guarded.
- 1075 Bars for elevator on lower floor. One child under age discharged. Complied with.
- 1083 Iron fire escape. Complied with.
- 1095 Gears to five bolting rolls guarded, gears to three case middling purifiers guarded, railing to runway fenced, large pulleys to feed rolls guarded. Complied with.
- 1161 Balance wheel and belt pulley guarded, six boys under age discharged. Complied with.
- 1162 Main belt boxed, fly wheel guarded. Complied with.
- 1163 Front end of planer guarded, fly wheel guarded. Destroyed by fire.
- 1164 Fly wheel guarded, rip saw boxed, railing on log slide. Complied with.
- 1165 Three boys under age discharged, keys to pulleys covered, gear to large roll covered, trimmer saw guarded. Complied with.
- 1169 Fly wheel and large belt guarded.
- 1103 Fly wheel fenced and fire escapes.
- 1111 Feed wheel, pulley and belt to resaw, pulley to molding, flooring and belt to planer in planing mill guarded.
- 1110 Fly wheel, pulley, bevel, friction set screws and main belt in saw mill guarded.
- 1118 Pulleys to dynamos and four driving pulleys to electric engine guarded.
- 1133 Arm of engine guarded.
- 1112 Fire escapes.
- 1140 Fire escapes on factory and warehouse. Fifteen children under age discharged.
- 1141 Guard fly wheel, bell connections to engine room. Complied with. Three children under age discharged.
- 1147 Three children under age discharged. Complied with.
- 1148 Pulleys, set screws, drive pulleys and belts guarded. Two children under age discharged.

- 1179 Gear on log carriage covered, fly wheel guarded, main belt boxed. Complied with.
- 1180 Front end and pulleys to three matchers guarded, set screws on main shaft guarded, two fly wheels and main belts guarded. Complied with.
- 1183 Railing on log slide, drive chain covered, fly wheel guarded, set screws covered, gears to all machines covered.
- 1185 Two boys under age discharged.
- 1200 Gear to planer shaper covered, belt and pulley to band saw boxed, counter shaft on molding machine covered, gears to sanding machine covered, belt boxed, counter shaft to rip saw boxed, C shaft to dove tailing machine boxed, connection from engine room to factory, automatic doors to elevator. Complied with.
- 1211 Fly wheel and connecting rod guarded. Complied with.
- 1214 Railing on log slide, cog wheel that runs band saw guarded, front end of all machines guarded. Complied with.
- 1215 Railing on outside stairway, fly wheel guarded, gear covered, set screws covered; gear to sticker machine, gear to veneer machine covered, gear to small planer covered, guard friction pulley on line shaft, guard 2 main belts in engine room. Complied with. Eighteen children under age discharged.
- 1227 Three children under age discharged. Complied with.
- 1230 Communication between each room where machinery is placed and engineer's room, auto. bars on lower floor and at end of bridge. Complied with.
- 1238 Bars on elevator.
- 1239 Connections to engine room, fly wheel guarded. Complied with.
- 1240 One child under age discharged. Complied with.
- 1246 Bars on wells and elevator shaft. Complied with.
- 1270 Fly wheel fenced, drive belt boxed, hand rails on stairs. Complied with.
- 1307 One child under age discharged. Complied with.
1299. Two fire escapes. Five children under age discharged.
- 1291 Fire escape. Three children under age discharged.
- 1288 Four fire escapes.
- 1303 Guard on fly wheel. Complied with.
- 1293 Connections from engine to factory. Complied with.
- 1295 Connections from engine room to factory. Complied with.
- 1277 Drive belt boxed. Complied with.
- 1311 Fly wheel fenced. Complied with.
- 1315 Fly wheel fenced, drive belt boxed, pulley on sanding machine guarded. Complied with.
- 1318 Drive belt boxed, hand rail on two stairs, openings guarded, elevator shaft guarded. Complied with.
- 1319 Drive belt and pulleys boxed, two boys under age discharged, joiner guarded. Complied with.
- 1321 Front end of all machines and also fly wheel guarded. Complied with.
- 1338 Guide pulley guarded. Complied with.
- 1347 Three children under age discharged. Complied with.
- 1356 Fly wheel and drive wheel guarded. Complied with.
- 1367 One child under age discharged. Complied with.
- 1371 Two children under age discharged. Complied with.
- 1385 One child under age discharged. Complied with.
- 1387 One child under age discharged. Complied with.
- 1392 Railing. Complied with.
- 1392 Fly wheel guarded, in planing mill and also in machine shop.
- 1394 Bars on elevator. Complied with.
- 1397 One child under age discharged. Complied with.
- 1403 Arm of engine guarded. Complied with.
- 1412 Fly wheel and belt guarded and bell connection with engine room. Complied with.
- 1323 Drive belt and pulleys boxed. Complied with.
- 1415 Two boys under age discharged. Complied with.
- 1418 Fly wheel guarded.
- 1425 Fly wheel guarded.

- 1426 Back end of molder, head sticker and planer guarded, connection from engine room to workshop. Complied with.
- 1429 One boy under age discharged. Complied with.
- 1433 Connections from engine room to workshop. Complied with.
- 1440 Doors swing out.
- 1441 One boy under age discharged. Complied with.
- 1445 Molding machine guarded, connection from engine room to workshop.
- 1448 Single head sticker and molding machine guarded, connection from engine-room to workshop.
- 1453 Pulley to gas engine guarded. Complied with.
- 1456 Fly wheel and belt boxed, gears and belt to feed mill covered. Complied with.
- 1457 End of molding and matching machine guarded, all gearing covered, belt to shingle saw covered. Complied with.
- 1458 Drive belt and pulleys boxed. Complied with.
- 1467 Fly wheel fenced and band saw boxed. Complied with.
- 1523 Fly wheel fenced. Complied with.
- 1525 Fly wheel fenced. Complied with.
- 1527 Fly wheel guarded.
- 1529 Fly wheel and connecting rod guarded. Complied with.
- 1531 Pulley to engine guarded.
- 1537 Connection from engine room to factory. Complied with.
- 1552 Elevator, pulleys, belts guarded. Complied with.
- 1564 Main belt and two fly wheels guarded. Complied with.
- 1567 Drive belt boxed and fly wheel guarded. Destroyed by fire.
- 1568 Two balance wheels guarded, connection from workshop to engine room, main belt boxed, all gears in bark mill covered, main belt and pulley guarded, railing on log side, pulley to sawdust conveyor boxed, gear to log roller guarded. Complied with.
- 1570 Drive belt and fly wheel guarded. Complied with.
- 1589 Two fly wheels guarded, main belt boxed, all set screws covered, back end of planer and matcher boxed.
- 1590 Fly wheel guarded. Complied with.
- 1591 Gearing covered. Complied with.
- 1593 Connection rod guarded, guard placed between pug mill and brick machines, set screws covered. Complied with.
- 1597 Fly wheel guarded. Complied with.
- 1599 One child under age discharged. Complied with.
- 1603 Railing on engine, two drive belts guarded, boy under age discharged. Complied with.
- 1604 One child under age discharged. Complied with.
- 1647 Fly wheel, main belt and planer guarded, steps on inside ladder. Complied with.
- 1684 Three drive belts boxed. Complied with.
- 1685 Two pulleys guarded. Complied with.
- 1691 All drive belts boxed. Complied with.
- 1696 Fly wheel guarded, set screw on shafting covered, gear to sticker machine covered. Complied with.
- 1713 Front end of all machines guarded, two fly wheels guarded, pulley and belt guarded, gears to lumber rolls guarded, railing on log slide. Complied with.
- 1714 Railing on runway. Complied with.
- 1716 All set screws and couplings covered, all bevel gears guarded, 12 gears to reel drive guarded.
- 1719 Railing around fly wheel.
- 1725 One child under age discharged. Complied with.
- 1731 Bell connections from factory to engine room. Complied with.
- 1732 Fly wheel guarded.
- 1736 Six children under age discharged. Complied with.
- 1740 One child under age discharged. Complied with.
- 1743 One child under age discharged. Complied with.
- 1746 Fly wheel guarded. Complied with.

- 1753 Guard around fly wheel, railing on stairways. Complied with.
1754 Two iron fire escapes. Two children under age discharged.
1766 Hand rails on inside stairways. Complied with.
1769. Railing around arm of engine, hand rail on outside stairs. Complied with.
Seven children under age discharged.
1774 One child under age discharged. Complied with.
1778 Alarm bell connections, two fire escapes, guard around fly wheel. Two children under age discharged. Complied with.
1779. Fly wheel guarded. Complied with.
1784 Hand rails on stairs. Complied with.
1782 Two iron fire escapes, alarm bell connections.
1785 Railing around arm of engine and on outside stairs. Complied with.
1795 Two fly wheels guarded. Complied with.
1805 Fly wheel guarded, all gears to bark mill guarded. Complied with.
1821 Railing on top of stairs, two new steps, fly wheel guarded. Complied with.
1822 Main belt boxed. Complied with.
1831 Fly wheel fenced. Complied with.
1834 Cut off saw boxed, fly wheel guarded, connections from engine room to factory. Complied with.
1836 Fly wheels guarded, two set screws on shaft guarded, friction on log flip guarded, drive wheel guarded, two set collars on shaft guarded, gear wheels to trimmer guarded, new board on table to edger saw, set screw on shaft to corn sheller guarded, fly wheel guarded, set screw on counter shaft guarded, large pulley guarded, railing on gear to feed mill, drive belt that runs gear shaft guarded, railings on two stairs, railing on log slide, extend log walk at end of mill. Complied with.
1840 Fly wheel guarded. Complied with.
1847 One child under age discharged. Complied with.
1851 Hand rails on stairs. Complied with.
1852 Hand rails on stairs, stair openings guarded. Complied with.
1867 Fly wheel fenced.
1868 Fly wheel fenced.
1881 Fly wheel guarded. Complied with.
1884 Two children under age discharged. Complied with.
1892 Dust collector. Complied with.
1893 Fly wheel and connecting rod guarded, belt boxed in Baker Bld. Fly wheel and connecting rod guarded in Bld. A. Two fly wheels guarded and railing over belt in Bld. B.
1894 Railing around fly wheel.
1896 One child under age discharged. Complied with.
1898 Fly wheel guarded, bars to elevator kept in place. Complied with.
1900 Arm of engine guarded, railing to stairway repaired, doors to elevator closed, belt on planer boxed. Complied with.
1903 Guard placed around crank of engine, gates on elevators, guard around 4-headed sticker, new stairs on frame building in yard. One child under age discharged.
1904 Fly wheel guarded. Complied with.
1905 Connecting rod and fly wheel guarded. One child under age discharged. Complied with.
1910 Fly wheel guarded and engine connection. One child under age discharged.
1911 Fire escape. One child under age discharged.
1913 One child under age discharged. Complied with.
1916 Engine guarded. Complied with.
1917 Fly wheel guarded. Complied with.
1920 One child under age discharged. Complied with.
1921 Railing on stairs, fly wheel guarded, new stairways. Complied with.
1923 Fire escape, doors swing out. Three children under age discharged. Complied with.
1924 One child under age discharged. Complied with.
1925 Connections from engine room to factory. Complied with.
1926 Fly wheel guarded. Complied with.
1927 Fly wheel guarded. Complied with.
1938 Auto. gates, fly wheel guarded, one child under age discharged.

- 1942 Fly wheel guarded and connection between engine room and factory. Complied with.
- 1930 Bars on elevator. Complied with. Two children under age discharged.
- 1931 Fly wheel guarded.
- 1934 Fly wheel guarded. Complied with. Three children under age discharged.
- 1935 Iron fire escapes. Complied with. Five children under age discharged.
- 1936 One child under age discharged. Complied with.
- 1944 Belt boxed. Complied with. Two children under age discharged.
- 1945 Connections from engine room to factory, hand rail on outside stairs. Complied with.
- 1947 Connections from engine room to factory. Complied with. Fire escapes, one child under age discharged.
- 1949 Bars on elevator openings. Complied with.
- 1953 Connections from engine room to factory. Complied with.
- 1954 Fly wheel guarded. Complied with.
- 1960 Fly wheel guarded. Complied with.
- 1963 Fly wheel guarded. Complied with.
- 1967 Fly wheel guarded, connection from engine room to work shop. Complied with. Fly wheel fenced, hole in floor fenced. Complied with.
- 1977 Boy under age discharged. Complied with.
- 1982 Main belt and connecting rod guarded. Complied with.
- 1988 Fly wheel guarded, front end of planers guarded, connection from engine room to planing mill. Destroyed by fire.
- 1989 Balance wheel and gearing guarded. Complied with.
- 1990 Fly wheel and main belt guarded.
- 1995 Railings on inside stairs, rip saw guarded. Complied with.
- 1996 One child under age discharged. Complied with.
- 2004 Two children under age discharged. Complied with.
- 2007 Four children under age discharged. Complied with.
- 2013 Connections from engine room to factory.
- 2014 Fly wheel guarded, main belt boxed, holes in floor covered. Complied with.
- 2015 Fly wheel guarded, main drive belt and cut-off saw guarded. Complied with.
- 2023 Fly wheel and drive belt fenced.
- 2035 Fly wheel guarded, cut-off saw boxed. Complied with.
- 2037 Fly wheel and connecting rod guarded, center holder to main shaft guarded, two planer pulley and rip saw more securely fastened and protected. Complied with.
- 2046 Fly wheel and arm of engine guarded, bars on elevator. Complied with.
- 2047 Fire escape. Railing around arm of engine. Seven children under age discharged.
- 2052 One child under age discharged. Complied with.
- 2055 Two children under age discharged. Complied with.
- 2060 Two fire escapes. Complied with. Five children under age discharged.
- 2060 Gates to elevator repaired.
- 2064 Fly wheel guarded. Complied with.
- 2068 Six children under age discharged. Complied with.
- 2075 Fly wheel guarded. Complied with.
- 2076 Three children under age discharged. Complied with.
- 2077 Four children under age discharged. Complied with.
- 2081 Three children under age discharged. Complied with.
- 2089 New bar on lower floor for elevator. Complied with. Fire escape.
- 2078 Railings. Complied with.
- 2091 New cable on elevator, railing around elevator, fly wheel guarded. Complied with. One child under age discharged.
- 2099 Fly wheel guarded. Complied with.
- 2093 Bars on elevator, railing near arm of engine. Complied with.
- 2145 Fly wheel fenced; pulley and belt guarded.
- 2146 Fly wheel guarded. Complied with.
- 2149 Fly wheel fenced. Complied with.
- 2042 Fly wheel fenced. Complied with.
- 2101 Large fly wheel guarded, set screws covered, all gears on planer guarded, also on matcher, fly wheel in pump house guarded, fly wheel in south engine in power house guarded. Complied with.

- 2105 Belt guarded, connections engine room to factory, railing for straw pit, cables oiled, elevator well guarded, railings in bleaching room. Complied with.
- 2106 Engine connection to all parts of building. Complied with.
- 2107 Fly wheel guarded.
- 2108 Two fly wheels guarded, connections from engine room to factory. Complied with.
- 2111 Boy under age discharged. Complied with.
- 2113 Two fly wheels guarded, main belt, pulley to bark mill, and pulley to pump guarded. Complied with.
- 2116 Fly wheel and connecting rod guarded, connections from engine room to mill. Out of business.
- 2118 Fly wheel, main belt, pulley and front end of planer guarded.
- 2119 Boy under age discharged. Complied with.
- 2131 Fly wheel, end of planer, band saw, and pulley to sash jointer guarded; belt to planer lowered. Complied with.
- 2132 Fly wheel, front end of all matching machines and front end of planer guarded.
- 2139 Two fly wheels guarded. Complied with.
- 2164 Five gears on 3rd floor guarded, also gears on 5th floor, belt tightened on 6th floor and fly wheel, pulleys and belt to electric engine. Complied with.
- 2166 Fire escape on elevator. Complied with.
- 2168 Six boys under age discharged. Complied with.
- 2212 Fly wheel boxed in coke engine room. Complied with.
- 2176 Six children under age discharged. Complied with.
- 2179 Fly wheel and pulley on main belt in engine room guarded. Complied with.
- 2188 Spur gear guarded, and bevel gear to flour conveyor covered, set screws on conveyor shaft covered. Complied with.
- 2189 Main belt boxed and front end of planer guarded.
- 2190 Five boys under age discharged. Complied with.
- 2173 Three boys under age discharged, set screws covered; sanding machines, rear end of planer, rip saw pulley and rear end of watcher guarded. Complied with. One boy under age discharged.
- 2199 Driving gear on 5th floor covered, also conveyor gear on 5th floor, reel driver on 5th floor, Wonder wheel on 6th floor, set screws on break scalper, gear on car puller guarded. Complied with.
- 2213 Large fly wheels guarded, 2 rope drives in engine room 2 and 3 guarded, two pulleys and connecting rod engine No. 1 guarded, south and north side of rope haulage engine and retail hoisting engine guarded. Complied with.
- 2214 Fly wheel and gearing guarded, extend platform on 1st floor used for oiling gear and put railing around the same in the elevator. Complied with.
- 2217 Guard large gear that drives edger on south side, also large main belt on south side, railing on log side, cover gear to tail end of live roll. Complied with.
- 2225 Railing on fly wheel. Complied with.
- 2231 Main belt guarded, large friction pulley guarded, all set screws covered, large pulley that runs circular saw guarded, railing on slide. Complied with.
- 2236 All gearing to flour rolls, drive wheels and pulleys guarded; hole in floor fenced, large wheel on attic floor guarded. Complied with.
- 2239 Fly wheel guarded, also pulley to engine. Complied with.
- 2243 Large fly wheel boxed. Complied with.
- 2247 Set screws on shafting 2nd floor guarded, lower pulley to band saw 2nd floor boxed, fly wheel to gas engine guarded, cover all set screws on line shaft. Complied with.
- 2174 Set screws on shafting guarded, gearing covered, railing extended around fly wheel. Six boys and four girls under age discharged. Complied with.
- 2262 Boy under age discharged. Complied with.
- 2271 Rear of lath machines guarded. Complied with.
- 2273 Caps over drive belt covered, opening in floor fenced. Complied with.
- 2277 Boy under age discharged. Complied with.
- 2281 Two fly wheels, main belt, key on line shaft and feed pulley guarded. Complied with.

- 2293 Set screws on shafting covered, connecting rod of engine guarded, connections from engine to factory.
- 2294 Fly wheel and pulley guarded, and walk repaired near fly wheel. Complied with.
- 2295 Fly wheel guarded.
- 2298 One child under age discharged. Complied with.
- 2299 Fly wheel and connection to engine of shingle mill guarded, bull wheel to draw saw boxed, pulley to drag saw covered, bolting saw guarded, belt to bolting saw guarded, counter shaft guarded, pulley on bolting saw boxed, set screws to edger covered, gear to counter shaft covered, set screws to line shaft covered, large wheel guarded, main belt to gang saw guarded, main belt boxed, fly wheel guarded. Complied with.
- 2300 Fly wheel and front end of sticker guarded, belt boxed. Complied with. Two children under age discharged.
- 2303 End of pulleys, two fly wheels, main belt and connecting rod guarded and gear to live roll boxed. Complied with.
- 2304 Both sides of fly wheel and connecting rod guarded, belt to shingle saw boxed, set screws on shaft covered. Complied with.
- 2367 Doors swing out, fans.
- 2373 Hole in floor fenced. Complied with.
- 2381 Pulley and cog wheels covered, hole in floor fenced. Complied with.
- 2386 Belt and pulley on shingle machine guarded. Complied with.
- 2393 Two children under age discharged. Complied with.
- 2394 Pulley boxed, belt lowered and cog wheels covered. Complied with. Six children under age discharged.
- 2397 Five floor openings fenced. Complied with.
- 2398 Two children under age discharged. Complied with.
- 2407 Gears to log carriers boxed, end of carriage, drive pulleys and fly wheel guarded; set screws on board machine covered, all set screws on shafting covered, connection from engine room to mill, belt on fly wheel guarded, couplings on shafting guarded, two large set screws covered, also gear wheels and set screws to drive saw. Complied with.
- 2417 Boy under age discharged. Complied with.
- 2421 Two boys under age discharged. Complied with.
- 2423 Gear to water wheel boxed, back end of molder and planer machines guarded, hand railing on stairs. Complied with.
- 2430 Pulleys guarded and sled stock that drives planer, hole covered, railing around elevator, belt boxed on splitting machine.
- 2435 Fly wheel and drive belt boxed. Complied with.
- 2437 Two boys under age discharged. Complied with.
- 2438 Fly wheel guarded. Complied with.
- 2455 Two boys under age discharged. Complied with.
- Fond du Lac—Fitzgerald Blacksmith. One child under age discharged. Complied with.
- Centralia—Overbeck Bros. Mfg. Co. One child under age discharged. Complied with.
- Green Bay—J. W. Johann. Pulleys and belt to planer guarded.
- Green Bay—Green Bay Cracker & Candy Co. Fire escapes.
- Green Bay—Streckenback & Co. Three children under age discharged. Complied with.
- Kenosha—John Schmitz. One child under age discharged. Complied with.
- Milwaukee—Western Mall. & Grey Iron Co. Box drive belt.
- Milwaukee—C. L. Jacobs & Son. One child under age discharged. Complied with.
- Milwaukee—Interior Woodwork Co. One child under age discharged. Complied with.
- Milwaukee—Filbert Co., A. J. Fire escapes. Complied with.
- Porters Mills—Anderson & Co. One child under age discharged. Complied with.
- Porters Mills—Sherwood Mfg. Co. Three children under age discharged. Complied with.
- Stoughton—C. G. Johnson. Fly wheel and drive belt guarded. Complied with.
- Algoma—Gablowsky Co. Gearing on shaper, sticker, planer and turning machine boxed. Complied with.
- Marathon City—Bohman & Graube. Drive wheel fenced. Complied with.

From February, 1897, to September, 1898, the inspectors reported 62 accidents occurring in 49 factories. Of this number ten proved fatal and the others were classified as follows: injuries to the body 2; hand or arm 35; foot or leg 9, and miscellaneous 6. Some difficulty was experienced in securing accurate and complete reports on accidents as the manufacturers were somewhat reluctant to give information on this subject for fear it would reflect on their management or factory. It will be noticed that a large percentage of the accidents were to the hand or arm of employes and the inspectors exercised the greatest care to order all machinery dangerous to operatives guarded. As the workmen become more familiar with the machinery they handle they take greater risks and a number of the accidents were due to this fact, though others were unavoidable and likely to happen with the most modern and well protected machinery.

- 38 Piece of iron fell on foreman's leg and broke it.
- 45 Man killed by bucket striking him in the neck.
- 48 Man had tip of finger cut off in joiner.
- 146 One man killed.
- 242 Three men burned face, hands and upper part of body by escaping gas from a furnace—one man died, others recovered.
- 345 Man killed, fell from ship.
- 347 Two men burned, not seriously.
- 353 Man killed by shaft.
- 405 Two boys fingers cut, not serious.
- 517 Man lost end of finger on joiner.
- 542 Man had hand crushed on glazing jack.
- 645 Man lost finger on joiner; another lost two fingers on rip saw.
- 672 Man lost two fingers on veneer machine.
- 678 Man killed by board striking him.
- 690 Woman had hand crushed.
- 698 Man killed on log carriage; another killed by flying board.
- 699 Man lost thumb and part of finger on shaper.
- 706 Man lost first joints of four fingers on shaper.
- 707 Man lost four fingers.
- 786 Man lost arm on shaft.
- 806 Man killed on shaft; another lost finger on lathe.
- 882 Man had finger cut on rip saw; another had finger cut off on shaper.
- 970 Man had foot smashed by stone falling on it.
- 999 Boy lost four fingers on planer.
- 1270 Man had three fingers cut off on planer.
- 1500 Two men lost tips of fingers on planer.
- 1505 Man had foot taken off by log skid.
- 1510 Man received internal injuries from fall.
- 1527 Man lost part of finger on saw.
- 1543 Man lost part of thumb on hoop knife.
- 1546 Man had face and hands burned.
- 1552 Foreman lost two fingers on planer.
- 1583 Man broke arm in belt; another burnt arm in dryer.
- 1608 Man badly scalded.
- 1611 Man lost finger on saw.

- 1644 Man lost four fingers in shingle mill.
 1695 Man lost finger on slab saw.
 1713 Man lost leg on log slide; man lost arm on band saw.
 1861 Leg broken by explosion.
 2096 Killed by clay bank falling in.
 2213 Man had leg broken .
 2247 Man lost a leg.
 2270 Man broke two ribs by falling between two logs; another lost hand and part of arm on a saw.
 2280 Man lost use of arm by scalding.
 2290 Man broke arm in machine.
 2309 Leg broken by stone falling on it.
 2299 Man lost leg on saw.
 2302 Man slightly burned.
 2394 Boy lost end of finger on turning machine; man lost finger in cog wheels; man lost two fingers on saw.

INSPECTION OF CHURCHES.

During the time covered by this report, 1896-97, the factory inspectors personally visited and inspected 548 churches in every part of the state. This is considerably less than the total number in the state, but with the duties of factory inspection and working to stamp out child labor the inspectors were compelled to confine their work to churches which were reported as being in need of a visit and those not looked over in previous inspections. The reports show that of the number inspected about an equal number are brick or frame structures. Those of frame make up 49.5 per cent. of the total; brick, 42.7 per cent.; stone, 6.6 per cent., and 1.2 per cent. were not answered on this particular question. None of the buildings being over two stories in height, doors and inside or outside stairways are depended upon in case of fire and to these the inspectors gave close attention.

A law was passed by the legislature of 1884 providing that doors on churches should swing out, and wherever necessary attention was called to this statute. Unless there was an apparent danger in case of fire, the churches built before 1884 with doors swinging in were not ordered to change them but in other instances the law was strictly enforced. The doors of 295 churches were reported to swing out and on 253 they swing in. The inspectors gave 121 orders to have doors changed to swing out and these were generally complied with.

The total seating capacity reported for 509 churches was 208,784, this making the average seating capacity slightly over 400. The 25 reports from Milwaukee show an average seating capacity of over 600 persons.

The dates when the churches were erected throw some light on the increase of places of worship. These show the increase to be steady and in line with the advance made by the state from an industrial standpoint. A number reported have passed the half century mark in their existence, while one in Prairie du Chien was built as early as 1836. Others were built between 1838 and 1847 in Lake Mills, Milwaukee, Beloit, Elkhorn and Darlington.

In this table under the heading of Frame, Brick or Stone, F indicates Frame; B, Brick, and S, Stone. In answer to whether doors swing in or out I is used as an abbreviation of in and O for out. Under the head of Orders, S. O. means that the doors have been ordered to swing out.

INSPECTION OF CHURCHES.

Name of Church.	Location.	Frame, brick, stone.	Means of escape.	When erected.	Doors swing in or out.	Seating capacity.	Date of inspection.	Orders.
Baptist	Albany, Green Co.....	F	2 D	1866	I	200	Dec. '97	S O
German Catholic	Albany, Green Co.....	F	2 D	1877	..	250	.. ..	S O
Methodist	Albany, Green Co.....	F	2 D	1866	..	200	.. ..	S O
Episcopal	Algoma, Kewaunee Co.....	B	2 D	1890	..	280	July '97	S O
German M. E.	Algoma, Kewaunee Co.....	F	1 D	1870	..	75	.. ..	.....
Memorial M. E.	Algoma, Kewaunee Co.....	F	1 D	1891	O	400	.. ..	.....
St. Mary's Catholic.....	Algoma, Kewaunee Co.....	B	2 D	1892	..	500	.. ..	.....
St. Paul Lutheran.....	Algoma, Kewaunee Co.....	F & B	2 D	1896	..	1,200	.. ..	.....
Congregational	Amery, Polk Co.....	B	2 D	1890	I	200	.. ..	S O
Baptist	Antigo, Langlade Co.....	F	3 D	1896	..	250	Nov. '97	S O
First M. E.	Antigo, Langlade Co.....	F	2 D	1894	O	800	.. ..	.....
German M. E.	Antigo, Langlade Co.....	F	2 D	1887	O	200	.. ..	.....
Lutheran N. A. C.	Antigo, Langlade Co.....	F	1 D	1889	O	150	.. ..	.....
Polish Catholic	Antigo, Langlade Co.....	F	2 D	1896	I	300	.. ..	.....
Presbyterian	Antigo, Langlade Co.....	F	2 D	1886	O	600	.. ..	.....
Reformed Church	Antigo, Langlade Co.....	B	2 D	1896	I	200	.. ..	S O
St. Johns Catholic	Antigo, Langlade Co.....	B	2 D	1885	O	300	.. ..	.....
Baptist	Appleton, Outagamie Co.....	F	2 D	1871	I	175	Sep. '97	.....
Congregational	Appleton, Outagamie Co.....	S & B	4 D	1888	O	1,000	.. ..	.....
Episcopal	Appleton, Outagamie Co.....	F	2 D	1864	I	150	.. ..	.....
Evangelical Emanuel	Appleton, Outagamie Co.....	B	2 D	1872	..	300	.. ..	S O
Memorial Presbyterian	Appleton, Outagamie Co.....	B	3 D	1879	..	1,000	.. ..	.....
Methodist	Appleton, Outagamie Co.....	B	4 D	.....	..	1,000	.. ..	S O
St. Joseph Catholic.....	Appleton, Outagamie Co.....	B	4 D	1858	O	1,200	.. ..	.....
St. Mary's Catholic.....	Appleton, Outagamie Co.....	B	2 D	1894	O	600	.. ..	.....
St. Mary's Irish Catholic.....	Appleton, Outagamie Co.....	B	4 D	1885	I	1,200	.. ..	.....
St. Johannes Lutheran.....	Appleton, Outagamie Co.....	B	2 D	1894	..	125	.. ..	S O
St. Paul Lutheran.....	Appleton, Outagamie Co.....	B	3 D	1877	..	200	.. ..	S O
Presbyterian	Bangor, La Crosse	F	.....	1884	I	175	June '97	.....

Christ's Catholic	Bayfield, Bayfield Co.	F		1860	I	200	Sep. '97	
Episcopal	Bayfield, Bayfield Co.	F		1879		100		
Methodist	Bayfield, Bayfield Co.	F		1881		175		
Presbyterian	Bayfield, Bayfield Co.	F		1888	O	375		
Methodist	Beaver Creek, Outagamie Co.	F	1 D	1880	I	200	Oct. '97	S O
St. Mary's Catholic	Beaver Creek, Outagamie Co.	F	2 D	1887		300		S O
Methodist	Beaver Dam, Dodge Co.	B		1871			Dec. '97	
Presbyterian	Beaver Dam, Dodge Co.	B		1887	O	400		
Lutheran	Belle Plain, Shawano Co.	B	1 D	1895		150	Oct. '97	
Methodist	Belle Plain, Shawano Co.	F	1 D	1878	I	100		
Bethlehem Lutheran	Beloit, Rock Co.	F	2 D	1893		400		S O
Christ Episcopal	Beloit, Rock Co.	S	2 D			200		
Congregational	Beloit, Rock Co.	B	4 D	1858		800		S O
First Baptist	Beloit, Rock Co.	B	3 D	1846		800		S O
First Presbyterian	Beloit, Rock Co.	B	2 D	1878		650		S O
German Lutheran	Beloit, Rock Co.	F	1 D	1878		150		
Lutheran	Beloit, Rock Co.	F	2 D	1897		200		S O
Methodist	Beloit, Rock Co.	B & S	2 D	1848		500		S O
Norwegian Lutheran	Beloit, Rock Co.	F	2 D	1885		200		S O
St. Thomas Catholic	Beloit, Rock Co.	B	4 D	1851		1,000		S O
Catholic	Berlin, Green Co.	B		1886	O	600	Dec. '97	
Irish Catholic	Berlin, Green Co.	B		1865	I	250	Sep. '97	
Trinity	Berlin, Green Co.	F		1870			Dec. '97	
Congregational	Birnamwood, Shawano Co.	F	2 D	1894	O	250	Nov. '97	
Catholic	Brillion, Calumet Co.	F	2 D	1878	I	300		S O
Evang. Frieder Gemeinde	Brillion, Calumet Co.	F	2 D	1896		400		S O
German Methodist	Brillion, Calumet Co.	F	2 D	1880		100		
Lutheran	Brillion, Calumet Co.	F	1 D	1882		125		
Baptist	Brodhead, Green Co.	B	2 D	1854		200	Dec. '97	S O
Catholic	Brodhead, Green Co.	F	2 D	1866		175		
Congregational	Brodhead, Green Co.	F	1 D			200		S O
Methodist	Brodhead, Green Co.	F	2 D	1878		350		S O
Norwegian Lutheran	Brodhead, Green Co.	B	1 D	1896	O	200		
Congregational	Burlington, Racine Co.	F	2 D	1885	I	250	Aug. '97	S O
Episcopal	Burlington, Racine Co.	B	2 D	1892	O	200		
German Lutheran	Burlington, Racine Co.	B	1 D	1883	I	200		S O
German Methodist	Burlington, Racine Co.	F	1 D	1892		200		S O
St. Johannes	Burlington, Racine Co.	F	2 D	1872		200		S O

INSPECTION OF CHURCHES.

INSPECTION OF CHURCHES—Continued.

Nam ^o of Church.	Location.	Frame, brick, stone.	Means of escape.	When erected.	Do doors swing in or out.	Seating capacity.	Date of inspection.	Orders.
St. Mary's Catholic	Burlington, Racine Co.....	B	5 D	1891	O	1,200	Aug. '97	.....
Congregational	Boscobel, Grant Co.....	F	1 D	1857	..	400	July '98	.....
German Lutheran	Boscobel, Grant Co.....	F	1 D	1884	I	175	.. ..	.....
Methodist	Boscobel, Grant Co.....	F	1 D	1870	..	200	.. ..	.....
Evangelical Lutheran	Cedarburg, Ozaukee Co.....	B & S	2 D	1891	..	225	July '97	.....
Lutheran Trinity	Cedarburg, Ozaukee Co.....	S	2 D	1891	O	200	.. ..	.....
St. Borgia Catholic.....	Cedarburg, Ozaukee Co.....	F	2 D	1872	..	225	.. ..	.....
Congregational	Chilton, Calumet Co.....	B	1 D	1883	I	200	Aug. '97	S O
German Lutheran	Chilton, Calumet Co.....	B	2 D	1885	I	250	.. ..	S O
Grace Episcopal	Chilton, Calumet Co.....	B	2 D	1896	O	225	.. ..	.....
St Augustine Catholic.....	Chilton, Calumet Co.....	B	4 D	1879	I	1,200	.. ..	S O
St. Mary's Catholic.....	Chilton, Calumet Co.....	B	4 D	1877	O	1,000	.. ..	.....
German Lutheran	Cecil, Calumet Co.....	F	1 D	1895	I	900	.. ..	S O
Congregational	Columbus, Columbia Co.....	B	.....	1875	..	400	Dec. '97	.....
German Lutheran	Columbus, Columbia Co.....	B	.....	1878	O	600	.. ..	.....
German Methodist	Columbus, Columbia Co.....	B	.....	1874	I	300	.. ..	.....
Methodist	Columbus, Columbia Co.....	B	.....	1872	O	500	.. ..	.....
Congregational	Clintonville, Waupaca Co.....	B	5 D	1895	..	500	Oct. '97	.....
Martin Lutheran.....	Clintonville, Waupaca Co.....	F	2 D	1885	..	600	.. ..	.....
German Methodist	Clintonville, Waupaca Co.....	F	1 D	1891	I	200	.. ..	S O
Methodist	Clintonville, Waupaca Co.....	F	3 D	1889	..	300	.. ..	S O
Norwegian Lutheran	Clintonville, Waupaca Co.....	F	1 D	1877	..	175	.. ..	.....
St. Joseph Catholic.....	Clintonville, Waupaca Co.....	B	2 D	1880	O	800	.. ..	.....
Saturday Auentist	Clintonville, Waupaca Co.....	F	1 D	1884	I	125	.. ..	.....
Congregational	Cashton, Monroe Co.....	F	.....	1894	..	.....	Nov. '97	S O
Baptist	Darlington, La Fayette Co.....	S	1 D	1877	..	250	.. ..	S O
Catholic	Darlington, La Fayette Co.....	S	3 D	1868	..	800	.. ..	S O
Congregational	Darlington, La Fayette Co.....	F	3 D	1847	O	600	.. ..	S O
Methodist	Darlington, La Fayette Co.....	B & S	2 D	1887	I	450	.. ..	S O
Baptist	Delavan, Walworth Co.....	B	3 D	1886	O	800	Oct. '97	.....

Christ Episcopal	Delavan, Walworth Co.	B	4 D	1877	I	800	Oct. '97	S O
Congregational	Delavan, Walworth Co.	B	2 D	1886	O	300	.. ..	.. ..
German Lutheran	Delavan, Walworth Co.	F	1 D	1897	O	100	.. ..	.. ..
Methodist	Delavan, Walworth Co.	B	2 D	1864	I	300	.. ..	S O
St. Andrew's Catholic	Delavan, Walworth Co.	B	2 D	1895	O	800	.. ..	.. ..
Baptist	Edgerton, Rock Co.	B	2 D	1880	I	250	Nov. '97	S O
Congregational	Edgerton, Rock Co.	F	2 D	1894	O	500	.. ..	.. ..
German Lutheran	Edgerton, Rock Co.	B	2 D	1884	O	300	.. ..	.. ..
Methodist Episcopal	Edgerton, Rock Co.	B	2 D	1895	..	400	.. ..	.. ..
Norwegian Lutheran	Edgerton, Rock Co.	B	2 D	1885	I	150	Nov. '97	.. ..
Baptist	Elkhorn, Walworth Co.	B	3 D	1885	O	500	Oct. '97	.. ..
Congregational	Elkhorn, Walworth Co.	B	2 D	1883	O	400	.. ..	.. ..
German Lutheran	Elkhorn, Walworth Co.	F	2 D	1889	O	175	.. ..	.. ..
Methodist Episcopal	Elkhorn, Walworth Co.	B	1 D	1888	..	350	.. ..	.. ..
St. Patrick's Catholic	Elkhorn, Walworth Co.	B	2 D	1881	I	350	.. ..	S O
Universalist	Elkhorn, Walworth Co.	F	1 D	1845	..	150	.. ..	.. ..
Congregational	Embarrass, Waupaca Co.	F	1 D	1876	..	100	.. ..	.. ..
German Lutheran	Embarrass, Waupaca Co.	F	1 D	1880	..	150	.. ..	.. ..
German Lutheran	Fairchild, Eau Claire Co.	F	.. ..	1888	O	200	Sep. '97	.. ..
Methodist Episcopal	Fairchild, Eau Claire Co.	F	.. ..	1893	O	200	.. ..	.. ..
Polish Catholic	Fairchild, Eau Claire Co.	F	.. ..	1888	..	250	.. ..	.. ..
Presbyterian	Fox Lake, Dodge Co.	B	.. ..	.. ..	I	.. ..	Dec. '97	.. ..
St. Mary's Catholic	Fox Lake, Dodge Co.	F	.. ..	1892	O	500	.. ..	.. ..
Congregational	Fort Atkinson, Jefferson Co.	F	2 D	1875	I	350	Oct. '97	.. ..
German Methodist	Fort Atkinson, Jefferson Co.	F	3 D	1891	O	150	.. ..	.. ..
Methodist Episcopal	Fort Atkinson, Jefferson Co.	F	2 D	1891	O	900	.. ..	.. ..
St. Joseph Catholic	Fort Atkinson, Jefferson Co.	B	2 D	1888	I	200	.. ..	S O
Universalist	Fort Atkinson, Jefferson Co.	F	3 D	.. ..	O	200	.. ..	.. ..
Baptist	Green Bay, Brown Co.	B	3 D	1875	I	300	Aug. '97	S O
Catholic Cathedral	Green Bay, Brown Co.	B	3 D	1876	..	1,000	.. ..	.. ..
Central Baptist	Green Bay, Brown Co.	F	1 D	1871	..	200	.. ..	S O
Christ Episcopal	Green Bay, Brown Co.	F	2 D	1871	..	800	.. ..	S O
First Presbyterian	Green Bay, Brown Co.	F	1 D	1891	..	100	.. ..	.. ..
German Lutheran	Green Bay, Brown Co.	F	3 D	1863	O	850	.. ..	.. ..
Holland Catholic	Green, Bay, Brown Co.	B	3 D	1876	O	1,500	.. ..	.. ..
Madison St. M. E.	Green, Bay, Brown Co.	B	1 D	1853	I	350	.. ..	.. ..
Moravian	Green, Bay, Brown Co.	F	1 D	1880	..	200	.. ..	.. ..
Presbyterian	Green, Bay, Brown Co.	B	4 D	1891	..	800	.. ..	.. ..
St. John's Catholic	Green, Bay, Brown Co.	B	7 D	1878	O	1,200	.. ..	.. ..

INSPECTION OF CHURCHES.

INSPECTION OF CHURCHES.—Continued.

Name of Church.	Location.	Frame, brick, stone.	Means of escape.	When erected.	Do doors swin in or out.	Seating capacity.	Date of inspec on.	Orders.
St. Paul Lutheran	Green Bay, Brown Co.....	F	3 D	1883	I	300	Aug. '97	S O
St. Paul M. E.	Green Bay, Brown Co.....	S	3 D	1890	O	400	.. ..	.. ..
St. Patrick's Catholic	Green Bay, Brown Co.....	B	5 D	1894	..	1,500	.. ..	.. ..
Spiritualist	Green Bay, Brown Co.....	F	1 D	1878	I	100	.. ..	.. ..
Catholic	Gratiot, La Fayette Co.....	F	2 D	1854	O	250	Dec. '97	.. ..
Methodist Episcopal	Gratiot, La Fayette Co.....	F	1 D	1877	I	150	.. ..	.. ..
St. Paul Lutheran	Grafton, Ozaukee Co.....	S	2 D	1870	O	200	July '97	.. ..
Congregational	Hartford, Washington Co.....	B	1 D	1885	I	200	Aug. '97	.. ..
Evang. Lutheran	Hartford, Washington Co.....	B	3 D	1897	..	400	.. ..	S O
Evang. Zions Gemenschaft	Hartford, Washington Co.....	B	2 D	1885	O	150	.. ..	S O
Lutheran Reformed	Hartford, Washington Co.....	F	1 D	1877	I	100	.. ..	.. ..
Methodist Episcopal	Hartford, Washington Co.....	F	1 D	1864	..	200	.. ..	S O
St. Kilian Catholic	Hartford, Washington Co.....	B	2 D	1876	..	400	.. ..	S O
Evang. St. Stevens	Horicon, Dodge Co.....	F	.. ..	1873	..	100	Dec. '97	S O
Methodist Episcopal	Horicon, Dodge Co.....	F	.. ..	1853	O	300	.. ..	.. ..
Baptist	Hortonville, Outagamie Co.....	F	2 D	1884	O	200	Oct. '97	.. ..
Evang. Lutheran	Hortonville, Outagamie Co.....	B	2 D	1897	..	500	.. ..	.. ..
Methodist Episcopal	Hortonville, Outagamie Co.....	F	2 D	1878	I	200	.. ..	S O
St. Paul Catholic	Hortonville, Outagamie Co.....	B	2 D	1894	O	500	.. ..	.. ..
Norwegian Lutheran	Independence, Trempealeau Co.....	F	1 D	1884	..	150	Dec. '97	.. ..
Polish Catholic	Independence, Trempealeau Co.....	B	3 D	1895	..	1,200	.. ..	.. ..
Episcopal	Jefferson, Jefferson Co.....	B	1 D	1867	I	125	Oct. '97	.. ..
Evang. Gemenschaft	Jefferson, Jefferson Co.....	B	1 D	1877	..	250	.. ..	S O
Evang. Lutheran	Jefferson, Jefferson Co.....	B	4 D	1895	O	1,250	.. ..	.. ..
German M. E.	Jefferson, Jefferson Co.....	B	2 D	1877	I	175	.. ..	.. ..
St. Johannes Catholic	Jefferson, Jefferson Co.....	B	2 D	1866	O	800	Oct. '97	.. ..
Congregational	Kaukauna, Outagamie Co.....	F	2 D	1891	O	400	Sep. '97	.. ..
Congregational	Kaukauna, Outagamie Co.....	F	1 D	1876	I	300	.. ..	S O
Epworth M. E.	Kaukauna, Outagamie Co.....	F	2 D	1886	O	800	.. ..	.. ..
Evang. Lutheran	Kaukauna, Outagamie Co.....	B	2 D	1877	I	200	.. ..	S O

Excelsior Catholic	Kaukauna, Outagamie Co.....	B	2 D	1877	I	500	Sept. '97	S O
Lutheran Reform	Kaukauna, Outagamie Co.....	B	2 D	1884	I	200	.. ..	S O
St. Mary's Catholic.....	Kaukauna, Outagamie Co.....	B	3 D	1885	O	550	.. ..	.. ..
Congregational	Kewaunee, Kewaunee Co.....	F	2 D	1885	I	200	July '97	S O
German Lutheran	Kewaunee, Kewaunee Co.....	B	3 D	1889	O	200	.. ..	.. ..
Holy Catholic	Kewaunee, Kewaunee Co.....	B	3 D	1895	O	850	.. ..	.. ..
St. Paul & St. Peter	Kiel, Manitowoc Co.....	F	2 D	1885	O	250	.. ..	.. ..
St. Paul & St. Peter Lutheran	Kiel, Manitowoc Co.....	B	2 D	1891	O	200	.. ..	.. ..
Presbyterian	Kilbourn, Columbia Co.....	F	.. ..	1892	O	300	Dec. '97	.. ..
Congregational	Lake Mills, Jefferson Co.....	B	1 D	1847	I	300	Nov. '97	S O
Methodist Episcopal	Lake Mills, Jefferson Co.....	B	2 D	1877	I	300	.. ..	S O
Moravian	Lake Mills, Jefferson Co.....	B	2 D	1872	I	125	.. ..	.. ..
Mt. Horeb Evang. Lutheran	Lake Mills, Jefferson Co.....	B	2 D	1891	O	300	.. ..	.. ..
St. John's Catholic.....	Little Chute, Outagamie Co.....	S	4 D	1848	I	1,000	Sep. '97	S O
Baptist	La Crosse, La Crosse Co.....	F	.. ..	1889	O	250	Mch. '97	.. ..
Church of Christ	La Crosse, La Crosse Co.....	B	.. ..	1884	O	200	.. ..	.. ..
Christ Church	La Crosse, La Crosse Co.....	F	.. ..	1881	.. ..	500	.. ..	.. ..
Congregational	La Crosse, La Crosse Co.....	B	.. ..	1875	.. ..	800	.. ..	.. ..
First Baptist	La Crosse, La Crosse Co.....	S	.. ..	1866	.. ..	400	.. ..	.. ..
First Evang.....	La Crosse, La Crosse Co.....	S	.. ..	1896	.. ..	450	.. ..	.. ..
German Baptist	La Crosse, La Crosse Co.....	F	.. ..	1884	.. ..	125	.. ..	.. ..
German M. E.....	La Crosse, La Crosse Co.....	B	.. ..	1895	.. ..	600	.. ..	.. ..
German M. E.....	La Crosse, La Crosse Co.....	B	.. ..	1888	.. ..	250	.. ..	.. ..
Grace Chapel	La Crosse, La Crosse Co.....	F	.. ..	1890	.. ..	150	.. ..	.. ..
Lutheran	La Crosse, La Crosse Co.....	B	.. ..	1868	.. ..	400	.. ..	.. ..
Lutheran Baptist	La Crosse, La Crosse Co.....	F	.. ..	1893	.. ..	150	.. ..	.. ..
Methodist Episcopal	La Crosse, La Crosse Co.....	F	.. ..	1890	.. ..	300	.. ..	.. ..
Norwegian Lutheran	La Crosse, La Crosse Co.....	B	.. ..	1890	.. ..	250	.. ..	.. ..
Norwegian Baptist	La Crosse, La Crosse Co.....	F	.. ..	1887	.. ..	150	.. ..	.. ..
Norwegian M. E.....	La Crosse, La Crosse Co.....	F	.. ..	.. ..	I	100	.. ..	.. ..
Norwegian Evang. Lutheran	La Crosse, La Crosse Co.....	B	.. ..	1890	O	300	.. ..	.. ..
Presbyterian	La Crosse, La Crosse Co.....	F	2 D	1879	.. ..	500	.. ..	.. ..
Presbyterian	La Crosse, La Crosse Co.....	F	.. ..	1896	.. ..	300	.. ..	.. ..
St. James' Catholic.....	La Crosse, La Crosse Co.....	B	.. ..	1886	.. ..	500	.. ..	.. ..
St. Joseph's Catholic.....	La Crosse, La Crosse Co.....	B	.. ..	1869	.. ..	900	.. ..	.. ..
St. Mary's Catholic	La Crosse, La Crosse Co.....	B	.. ..	1874	.. ..	400	.. ..	.. ..
St. Paul Universalist	La Crosse, La Crosse Co.....	B	.. ..	1878	.. ..	350	.. ..	.. ..
St. Paul Evang.....	La Crosse, La Crosse Co.....	B	.. ..	1896	.. ..	550	.. ..	.. ..
Wood St. M. E.....	La Crosse, La Crosse Co.....	F	.. ..	1890	.. ..	150	.. ..	.. ..
Advent Church	Loyal, Clark Co.....	B	.. ..	1893	I	300	June '98	S O

INSPECTION OF CHURCHES.—Continued.

Name of Church.	Location.	Frame, brick, stone.	Means of escape.	When erected.	Do doors swing in or out.	Seating capacity.	Date of inspection.	Orders.
Methodist	Loyal, Clark Co.....	B	.....	1894	O	300	June '98	.....
St Bathasas Catholic.....	Loyal, Clark Co.....	B	.....	1894	..	500	.. ..	S O
Immaculate Conception Catholic	Manitowoc, Manitowoc Co.....	F	2 D	1877	I	150	Aug. '97	.....
Evangelical Reform	Manitowoc, Manitowoc Co.....	F	3 D	1892	O	400	.. ..	.....
First Presbyterian	Manitowoc, Manitowoc Co.....	B	3 D	1870	..	750	.. ..	.....
German Lutheran	Manitowoc, Manitowoc Co.....	B	2 D	1873	..	1,000	.. ..	.....
German M. E.....	Manitowoc, Manitowoc Co.....	B	2 D	1882	..	250	.. ..	.....
Norwegian Lutheran	Manitowoc, Manitowoc Co.....	F	2 D	1887	..	200	.. ..	.....
Norwegian M. E.....	Manitowoc, Manitowoc Co.....	F	1 D	1875	I	50	.. ..	.....
St. Boniface Catholic.....	Manitowoc, Manitowoc Co.....	B	4 D	1885	O	1,200	.. ..	.....
St. James Episcopal.....	Manitowoc, Manitowoc Co.....	F	2 D	1859	I	150	.. ..	.....
St. Paul Norwegian Lutheran.....	Manitowoc, Manitowoc Co.....	F	1 D	1881	..	175	.. ..	.....
St. Paul M. E.....	Manitowoc, Manitowoc Co.....	F	2 D	1878	..	200	.. ..	.....
Evang. Lutheran	Marathon, Marathon Co.....	B	1 D	1888	O	150	Nov., '97	.....
Votivitas Catholic.....	Marathon, Marathon Co.....	B	4 D	1875	..	500	.....	.....
Baptist Tabernacle	Marinette, Marinette Co.....	F	2 D	1881	..	200	Oct., '97	.....
Danish Lutheran	Marinette, Marinette Co.....	F	2 D	1887	I	300	.. ..	S O
Episcopal	Marinette, Marinette Co.....	F	2 D	1885	..	250	.. ..	S O
Evang. Lutheran	Marinette, Marinette Co.....	F	2 D	1876	..	300	.. ..	S O
First Baptist	Marinette, Marinette Co.....	B	2 D	1893	O	1,000	.. ..	S O
French St. Joseph.....	Marinette, Marinette Co.....	B	4 D	1891	..	800	.. ..	.....
German Lutheran	Marinette, Marinette Co.....	F	2 D	1887	I	400	.. ..	.....
Methodist Episcopal	Marinette, Marinette Co.....	B	5 D	1896	O	1,200	.. ..	.....
Norwegian Lutheran	Marinette, Marinette Co.....	F	2 D	.....	I	250	.. ..	S O
Our Lady of the Lord	Marinette, Marinette Co.....	B	4 D	1876	O	500	.. ..	.....
Pioneer Presbyterian	Marinette, Marinette Co.....	F	4 D	1894	..	1,000	.. ..	.....
Polish Sacred Heart	Marinette, Marinette Co.....	F	2 D	1893	..	800	.. ..	.....
Swedish Baptist	Marinette, Marinette Co.....	F	1 D	1888	I	150	.. ..	S O
Swedish M. E.....	Marinette, Marinette Co.....	F	2 D	1888	..	150	.. ..	S O
Swedish Mission Haset	Marinette, Marinette Co.....	F	2 D	1889	..	150	.. ..	S O
Union Chapel.....	Marinette, Marinette Co.....	F	2 D	1874	O	200	.. ..	S O

Catholic	Mayville, Dodge Co.	B		1881	O	400	Dec., '97	
German Lutheran	Mayville, Dodge Co.	F		1885		300		
St. Paul Lutheran	Medina, Outagamie Co.	F	1 D	1888	I	150	Oct., '97	\$ O
Congregational	Menasha, Winnebago Co.	B	2 D	1877		400	Sept., '97	\$ O
Episcopal	Menasha, Winnebago Co.	F	2 D	1850		150		
German Lutheran	Menasha, Winnebago Co.	B	2 D	1890	O	500		
German M. E.	Menasha, Winnebago Co.	B	2 D	1856	I	250		\$ O
German M. E.	Menasha, Winnebago Co.	B	2 D	1890	O	500		
Norwegian	Menasha, Winnebago Co.	F	1 D	1875	I	125		
St. John's Catholic	Menasha, Winnebago Co.	B	4 D	1888		850		
St. Mary's Catholic	Menasha, Winnebago Co.	B	4 D	1883	O	1,000		
St. Patrick's Catholic	Menasha, Winnebago Co.	B	5 D	1883		800		
German M. E.	Menomonie, Dunn Co.	F		1883	I	200	Aug., '97	
German Lutheran	Menomonie, Dunn Co.	F	2 D	1884		200		
Methodist Episcopal	Menomonie, Dunn Co.	B				200		
Methodist Episcopal	Menomonie, Dunn Co.	F	1 D	1883		300		
Norwegian Lutheran	Menomonie, Dunn Co.	F		1885	O	275		
St. Joseph's Catholic	Menomonie, Dunn Co.	F		1865	I	129		
St. Joseph's Catholic	Menomonie, Dunn Co.	B		1883	O	400		
St. Paul Lutheran	Menomonie, Dunn Co.	B		1887		450		
Adventist	Milton Junction, Rock Co.	F	2 D	1887		300	Nov., '97	
German Catholic	Milton Junction, Rock Co.	F	2 D	1877	I	175		
Methodist Episcopal	Milton Junction, Rock Co.	F	2 D	1888		500		
Beve Jeshelum	Milwaukee, Milwaukee Co.	B	4 D	1886	O	1,200	Jan., '97	
Calvary	Milwaukee, Milwaukee Co.	B	5 D	1870		800		
Christ Congregational	Milwaukee, Milwaukee Co.	F	2 D	1895		250		
Christ Episcopal	Milwaukee, Milwaukee Co.	F	2 D	1895		200		
Emanuel	Milwaukee, Milwaukee Co.	S	2 D	1873		1,000		
Emanuel	Milwaukee, Milwaukee Co.	F	2 D	1882	I	200		
Fifth Baptist	Milwaukee, Milwaukee Co.	F	2 D	1884	O	300		
First Dutch	Milwaukee, Milwaukee Co.	B	2 D	1874		450		
First Baptist	Milwaukee, Milwaukee Co.	B	3 D	1888		500		
First Unitarian	Milwaukee, Milwaukee Co.	S	3 D	1888		500		
Gesu Church	Milwaukee, Milwaukee Co.	S	9 D	1893		2,000		
German M. E.	Milwaukee, Milwaukee Co.	B	2 D	1890		900		
Grand Ave. M. E.	Milwaukee, Milwaukee Co.	B	2 D	1870		1,000		
Grand Ave. Congregational	Milwaukee, Milwaukee Co.	B	5 D	1887		1,400		
Guauden Lutheran	Milwaukee, Milwaukee Co.	B	2 D	1856		200		
Holy Name	Milwaukee, Milwaukee Co.	F	1 D	1876		450		
Holy Rosary Catholic	Milwaukee, Milwaukee Co.	B	3 D	1885		600		

INSPECTION OF CHURCHES.—Continued.

Name of Church.	Location.	Frame, brick, stone.	Means of escape.	When erected.	Do doors swing in or out.	Seating capacity.	Date of inspection.	Orders.
Lutheran	Milwaukee, Milwaukee Co.....	F	1 D	1885	I	250	Jan. '97	.....
Methodist Episcopal	Milwaukee, Milwaukee Co.....	F	4 D	1886	O	420	.. ..	.....
Methodist Episcopal	Milwaukee, Milwaukee Co.....	B	3 D	1868	..	500	.. ..	.....
Methodist Episcopal	Milwaukee, Milwaukee Co.....	F	2 D	1889	..	300	.. ..	.....
Pilgrim Congregational	Milwaukee, Milwaukee Co.....	F	3 D	1887	..	450	.. ..	.....
Redeemer Church	Milwaukee, Milwaukee Co.....	B	2 D	1890	..	500	.. ..	.....
St. Hedwig	Milwaukee, Milwaukee Co.....	B	4 D	1886	..	1,500	.. ..	.....
St. Mary's Catholic	Milwaukee, Milwaukee Co.....	B	4 D	1867	..	1,000	.. ..	.....
St. John's Cathedral	Milwaukee, Milwaukee Co.....	B	5 D	1850	..	1,000	.. ..	.....
St. Marcus	Milwaukee, Milwaukee Co.....	F	2 D	1881	..	800	.. ..	.....
St. Mathews	Milwaukee, Milwaukee Co.....	B	2 D	1875	..	800	.. ..	.....
St. Mark's Episcopal	Milwaukee, Milwaukee Co.....	F	3 D	1894	..	200	.. ..	.....
St. Paul and St. Peter	Milwaukee, Milwaukee Co.....	B	4 D	1890	..	600	.. ..	.....
St. Stevens	Milwaukee, Milwaukee Co.....	F	3 D	1890	..	300	.. ..	.....
St. Paul	Milwaukee, Milwaukee Co.....	S	5 D	1838	..	1,200	.. ..	.....
St. Rose of Lima	Milwaukee, Milwaukee Co.....	B	3 D	1889	..	600	.. ..	.....
St. Paul and St. Peter Chapel	Milwaukee, Milwaukee Co.....	B	3 D	1889	..	150	.. ..	.....
Salem	Milwaukee, Milwaukee Co.....	F	3 D	1889	..	300	.. ..	.....
Tabernacle	Milwaukee, Milwaukee Co.....	B	4 D	1889	..	1,000	.. ..	.....
Tabernacle	Milwaukee, Milwaukee Co.....	B	3 D	1892	..	250	.. ..	.....
West Minister Presbyterian	Milwaukee, Milwaukee Co.....	F	1 D	1880	O	200	.. ..	.....
West Minister Presbyterian	Milwaukee, Milwaukee Co.....	F	3 D	1895	I	1,000	.. ..	.....
Episcopal	Mineral Point, Iowa Co.....	B	2 D	1884	I	300	Nov. '97	S O
Methodist Episcopal	Mineral Point, Iowa Co.....	F	3 D	1867	O	550	.. ..	.....
Methodist Episcopal	Mineral Point, Iowa Co.....	B	5 D	1892	I	1,200	.. ..	S O
Salvation Army Church	Mineral Point, Iowa Co.....	B	2 D	1877	..	150	.. ..	.....
St. Paul Catholic	Mineral Point, Iowa Co.....	S	2 D	1880	O	400	.. ..	.....
Adventist	Monroe, Green Co.....	F	2 D	1877	I	75	Dec., '97	.....
Catholic	Monroe, Green Co.....	F	4 D	1893	O	800	.. ..	.....
Catholic	Monroe, Green Co.....	F	2 D	1888	..	200	.. ..	.....
Christ Church	Monroe, Green Co.....	F	1 D	1879	I	125	.. ..	.....

Episcopal	Monroe, Green Co.	F	1 D	1860	..	50	Dec. '97	.....
Evang. Lutheran	Monroe, Green Co.	F	1 D	1891	..	200	..	S O
German Lutheran	Monroe, Green Co.	F	2 D	1897	O	500	..	.....
German Catholic	Monroe, Green Co.	F	2 D	1860	I	100	..	.....
German Evangelical	Monroe, Green Co.	B	2 D	1889	O	250	..	.....
German M. E.	Monroe, Green Co.	F	1 D	1881	I	125	Dec., '97	.....
Methodist Episcopal	Monroe, Green Co.	F	2 D	1891	O	250	..	.....
Methodist Episcopal	Monroe, Green Co.	F	2 D	1897	I	800	..	S O
Presbyterian	Monroe, Green Co.	F	1 D	1848	..	200	..	S O
United Brethren	Monroe, Green Co.	F	1 D	1877	..	75	..	.....
Universalist	Monroe, Green Co.	F	1 D	1877	..	75	..	.....
Lutheran	Marion, Waupaca Co.	B	2 D	1850	..	400	..	S O
Baptist	Monticello, Green Co.	F	1 D	1885	..	125	Nov., '97	.....
Evang. Reformed	Monticello, Green Co.	S	2 D	1861	..	150	Dec., '97	.....
Methodist Episcopal	Monticello, Green Co.	F	1 D	1888	..	250	..	.....
Seventh Day Adventist.....	Monticello, Green Co.	F	1 D	.....	..	200	..	S O
Methodist Episcopal	Mauston, Juneau Co.	F	2 D	1895	..	150	..	.....
St. Patricks	Mauston, Juneau Co.	F	.....	1880	O	.....	..	.....
St. Johns Catholic	Marshfield, Wood Co.	F	.....	1880	..	.....	..	.....
Christ Presbyterian	Madison, Dane Co.	S	.....	1893	..	1,000	Feb., '97	.....
Christ Scientist	Madison, Dane Co.	S	.....	1892	..	600	Mch., '98	.....
Episcopal Grace	Madison, Dane Co.	S	.....	1863	I	175	..	.....
First Baptist	Madison, Dane Co.	S	.....	1858	..	850	..	.....
First Methodist	Madison, Dane Co.	S	.....	1853	..	300	..	.....
First Congregational	Madison, Dane Co.	S	.....	1876	..	800	..	.....
.....	Madison, Dane Co.	S & B	.....	1866	O	1,200	..	.....
Holy Redeemer	Madison, Dane Co.	B	.....	1869	I	1,000	..	.....
Norwegian Lutheran	Madison, Dane Co.	F	.....	1878	..	275	..	.....
Our Savior	Madison, Dane Co.	F	.....	1897	O	275	..	.....
St. Johns Lutheran	Madison, Dane Co.	F	.....	1873	..	200	..	.....
St. Patrick	Madison, Dane Co.	B	.....	1888	..	500	..	.....
St. Raphael's Catholic	Madison, Dane Co.	S	.....	1850	I	1,100	..	S O
Unitarian Society	Madison, Dane Co.	S	.....	.....	O	400	..	.....
Baptist	Mazomanie, Dane Co.	F & S	1 D	1865	I	150	July, '98	.....
Congregational	Mazomanie, Dane Co.	F	2 D	1891	O	450	..	.....
Catholic	Mazomanie, Dane Co.	S	2 D	1890	..	1,000	..	.....
English Lutheran	Mazomanie, Dane Co.	F	1 D	1871	..	100	..	.....
Evang. Germanschoft Salems.....	Mazomanie, Dane Co.	S	1 D	1874	I	250	..	.....
Methodist Episcopal	Mazomanie, Dane Co.	B	1 D	1870	..	250	..	.....
Baptist	Neenah, Winnebago Co.	F	2 D	1896	O	250	Sept., '97	.....
Danish Baptist	Neenah, Winnebago Co.	F	2 D	1857	I	75	..	.....
Danish Lutheran	Neenah, Winnebago Co.	F	2 D	1883	..	250	..	S O

INSPECTION OF CHURCHES.—Continued.

Name of Church.	Location.	Frame, brick, stone.	Means of escape.	When erected.	Do doors swing in or out.	Seating capacity.	Date of inspection.	Orders.
First Presbyterian	Neenah, Winnebago Co.	F	3 D	1874	I	500	Sept. '97	S O
Methodist Episcopal	Neenah, Winnebago Co.	F	2 D	1888	I	500	.. ..	.. ..
Norwegian	Neenah, Winnebago Co.	F	1 D	1862	I	125	.. ..	.. ..
Norwegian Lutheran	Neenah, Winnebago Co.	F	1 D	1880	..	175	.. ..	.. ..
Reformed Lutheran	Neenah, Winnebago Co.	B	2 D	1891	O	75	.. ..	.. ..
Trinity Lutheran	Neenah, Winnebago Co.	B	2 D	1888	..	550	.. ..	.. ..
Universal Good Shepherd	Neenah, Winnebago Co.	B	1 D	1867	I	300	.. ..	S O
Evang. Lutheran	Neillsville, Clark Co.	B	.. ..	1895	O	250	.. ..	.. ..
St. Johannes Lutheran	New London, Waupaca Co.	B	1 D	1881	I	75	.. ..	.. ..
Saturday Adventist	New London, Waupaca Co.	F	1 D	1895	O	125	.. ..	.. ..
St. Joseph's Catholic	New London, Waupaca Co.	B	3 D	1890	..	800	.. ..	.. ..
St. Paul Lutheran	New London, Waupaca Co.	B	2 D	1875	I	400	.. ..	S O
Congregational	Norrie, Marathon Co.	F	2 D	1894	O	250	Nov., '97	.. ..
Congregational	Nekoosa, Wood Co.	F	2 D	1894	..	250	.. ..	.. ..
Lutheran	Nekoosa, Wood Co.	F	1 D	1890	..	..	.. ..	.. ..
Baptist	Oakfield, Fond du Lac Co.	F	.. ..	1867	I	150	July, '97	.. ..
Grace Church	Oakfield, Fond du Lac Co.	F	.. ..	1892	..	200	.. ..	S O
Methodist Episcopal	Oakfield, Fond du Lac Co.	F	.. ..	1884	..	150	.. ..	S O
St. Lucas Lutheran	Oakfield, Fond du Lac Co.	B	.. ..	1892	..	200	.. ..	S O
Episcopal	Oconto, Oconto Co.	F	2 D	1878	I	100	Oct. '97	.. ..
Evang. Lutheran	Oconto, Oconto Co.	B	2 D	1889	..	225	.. ..	S O
Evang. Lutheran	Oconto, Oconto Co.	F	1 D	1884	..	100	.. ..	.. ..
French Catholic	Oconto, Oconto Co.	F	2 D	1857	O	200	.. ..	.. ..
Methodist Episcopal	Oconto, Oconto Co.	B	5 D	1866	..	450	.. ..	.. ..
Presbyterian	Oconto, Oconto Co.	B	3 D	1893	..	650	.. ..	.. ..
St. Joseph's Catholic	Oconto, Oconto Co.	B	5 D	1870	..	1,400	.. ..	.. ..
Evang. Lutheran	Oshkosh, Winnebago Co.	B	.. ..	1874	..	300	Feb. '97	.. ..
Evang. Lutheran	Oshkosh, Winnebago Co.	F	.. ..	1882	..	300	.. ..	.. ..
First Presbyterian	Oshkosh, Winnebago Co.	..	.. ..	1893	..	800	.. ..	.. ..
German Methodist	Oshkosh, Winnebago Co.	B	.. ..	1885	..	400	.. ..	.. ..
Methodist Episcopal	Oshkosh, Winnebago Co.	S	.. ..	1890	..	900	.. ..	.. ..

St. Johns Universalist.....	Oshkosh, Winnebago Co.....	F		1889	O	300	Feb. '97	
St. Mary's Catholic.....	Oshkosh, Winnebago Co.....	B		1886		1,500		
St. Peters Roman Catholic.....	Oshkosh, Winnebago Co.....	B		1875		900		
Second M. E.....	Oshkosh, Winnebago Co.....	B		1872		250		
Congregational.....	Peshigo, Marinette Co.....	F	2 D	1880	O	300		S O
Evang. Lutheran.....	Peshigo, Marinette Co.....	F	1 D	1896		350		
Methodist Episcopal.....	Peshigo, Marinette Co.....	F	1 D	1873	I	125		S O
St. Mary's Catholic.....	Peshigo, Marinette Co.....	F	2 D	1872		250		
Congregational.....	Platteville, Grant Co.....	B	4 D	1874		2,000	Dec. '97	S O
Christian Church.....	Platteville, Grant Co.....	B	1 D	1884		250		S O
Evang. Lutheran.....	Platteville, Grant Co.....	F	2 D	1888		200		S O
Father Hemipin Catholic.....	Platteville, Grant Co.....	B	2 D		O	250		
German M. E.....	Platteville, Grant Co.....	B	1 D	1876	I	175		
Lutheran.....	Platteville, Grant Co.....	B	2 D		I	250		S O
Methodist Episcopal.....	Platteville, Grant Co.....	B	4 D	1877	O	1,000		
Trinity.....	Platteville, Grant Co.....	B	2 D	1864	I	450		S O
Episcopal.....	Plymouth, Calumet Co.....	F	4 D	1881	O	200	Aug. '97	
Evang. Lutheran.....	Plymouth, Calumet Co.....	B	5 D	1890		400		
German Catholic.....	Plymouth, Calumet Co.....	F	2 D	1874	I	200		S O
German M. E.....	Plymouth, Calumet Co.....	F	1 D	1865		100		
Emanuel.....	Port Washington, Ozaukee Co.....	B	1 D	1862		50		
Episcopal E. M.....	Port Washington, Ozaukee Co.....	B	2 D	1851	O	350		
Evangelical.....	Port Washington, Ozaukee Co.....	B	2 D	1889		800		
St. Johannes Lutheran.....	Port Washington, Ozaukee Co.....	F	2 D	1892	I	200		
St. Mary's Catholic.....	Port Washington, Ozaukee Co.....	B	4 D	1882	O	1,000		
Catholic Church.....	Prentice, Price Co.....	F		1893		200	Nov. '97	
Presbyterian.....	Prentice, Price Co.....	F		1893		250		
Baptist.....	Portage, Columbia Co.....	B		1853	I			
Episcopal.....	Portage, Columbia Co.....	B	2 D	1892	O	500		
Presbyterian.....	Portage, Columbia Co.....	B		1886				
St. Mary's.....	Portage, Columbia Co.....	B		1886				
Bohemian Catholic.....	Prairie du Chien, Crawford Co.....	F	1 D	1891	O	200	July '98	
Congregational.....	Prairie du Chien, Crawford Co.....	B	1 D	1857	I	400		
Episcopal.....	Prairie du Chien, Crawford Co.....	F	1 D	1870		150		
Evang. Zions.....	Prairie du Chien, Crawford Co.....	F	3 D	1865		250		
Evang. Lutheran St. Peters.....	Prairie du Chien, Crawford Co.....	F	1 D		O	150		
Methodist Episcopal.....	Prairie du Chien, Crawford Co.....	F	1 D	1849	I	150		
St. Gabriel Catholic.....	Prairie du Chien, Crawford Co.....	S	2 D	1836		450		
Bohemian Catholic.....	Reedsville, Manitowoc Co.....	B	2 D	1884		150	Nov. '97	
Evang. Lutheran.....	Reedsville, Manitowoc Co.....	B	2 D	1879		250		S O

36

INSPECTION OF CHURCHES.

465

INSPECTION OF CHURCHES.—Continued.

Name of Church.	Location.	Frame, brick, stone.	Means of escape.	When erected.	Do doors swing in or out.	Seating capacity.	Date of inspection.	Orders.
Reform Lutheran	Reedsville, Manitowoc Co.....	F	1 D	1880	O	300	Nov. '97	.....
German Catholic	Rib Lake, Taylor Co.....	F	.....	1896	..	150	.. ..	.....
Methodist Episcopal	Rib Lake, Taylor Co.....	F	1 D	1893	..	150	.. ..	.....
Congregational	Ripon, Fond du Lac Co.....	S	.....	1868	O	400	Nov. '97	.....
Congregational	Ripon, Fond du Lac Co.....	B	.....	1860	I	700	.....	.....
Baptist	Richland Center, Richland Co.....	B	1 D	1877	..	250	July '98	.....
Christian Church	Richland Center, Richland Co.....	F	2 D	1878	..	400	.....	.....
First Presbyterian	Richland Center, Richland Co.....	B	2 D	1857	O	600	.. ..	.....
Lutheran	Richland Center, Richland Co.....	B	2 D	1892	I	400	.. ..	.....
St. Mary's Catholic.....	Richland Center, Richland Co.....	B	2 D	1891	O	800	.. ..	.....
United Brothers	Richland Center, Richland Co.....	F	2 D	1894	I & O	450	.. ..	.....
Evang. Lutheran	Schlessingerville, Washington Co.....	B	1 D	1886	O	250	Aug. '97	.....
Reformed Church	Schlessingerville, Washington Co.....	B	1 D	1872	I	150	.. ..	.....
St. Mary's Catholic	Schlessingerville, Washington Co.....	S	3 D	1894	O	600	.. ..	.....
Catholic	Seymour, Outagamie Co.....	F	.....	1879	I	175	Dec. '97	.....
Congregational	Seymour, Outagamie Co.....	F	.....	1890	O	200	.. ..	.....
Evang. Lutheran	Seymour, Outagamie Co.....	B	.....	1878	I	200	.. ..	.....
St. Paul M. E.....	Seymour, Outagamie Co.....	F	.....	1896	O	350	.. ..	.....
Zions Church	Seymour, Outagamie Co.....	F	.....	1873	I	150	.. ..	.....
Episcopal	Shawano, Shawano Co.....	F	2 D	1891	O	250	.. ..	.....
Lutheran	Shawano, Shawano Co.....	F	2 D	1878	..	200	.. ..	.....
Methodist Episcopal	Shawano, Shawano Co.....	F	1 D	1877	I	200	.. ..	SO
Presbyterian	Shawano, Shawano Co.....	F	2 D	1883	..	400	.. ..	SO
St. John's Catholic	Shawano, Shawano Co.....	B	2 D	1890	O	500	.. ..	.....
Congregational	Shullsburg, La Fayette Co.....	B	3 D	1857	..	600	.. ..	.....
Lutheran	Shullsburg, La Fayette Co.....	F	1 D	1860	I	100	.. ..	.....
Methodist Episcopal	Shullsburg, La Fayette Co.....	S	1 D	1867	O	400	.. ..	SO
St. Mathews.....	Shullsburg, La Fayette Co.....	S	3 D	1865	O	600	.. ..	SO
Baptist	Stoughton, Dane Co.....	F	1 D	1879	I	250	Nov. '97	SO
Congregational	Stoughton, Dane Co.....	F	2 D	1880	..	125	.. ..	.....
First Universalist	Stoughton, Dane Co.....	B	3 D	1858	..	200	.. ..	SO
Lutheran	Stoughton, Dane Co.....	B	4 D	1893	..	600	.. ..	SO

Methodist Episcopal	Stoughton, Dane Co.	F	1 D	1877	I	175	Nov. '97	
Norwegian M. E. Congregational	Stoughton, Dane Co.	B	2 D	1866	..	150	.. ..
German Lutheran	Sturgeon Bay, Door Co.	F	3 D	1890	O	800	July '97	
Moravian	Sturgeon Bay, Door Co.	F	1 D	1892	I	200	.. ..	S O
Methodist Episcopal	Sturgeon Bay, Door Co.	F	2 D	1877	..	450	.. ..
	Sturgeon Bay, Door Co.	F	1 D	1884	..	100	.. ..
Norwegian Lutheran	Sturgeon Bay, Door Co.	B	1 D	1886	..	100	.. ..
St. Joseph's Catholic	Sturgeon Bay, Door Co.	B	2 D	1888	O	800	.. ..
Bapuis	Sun Prairie, Dane Co.	B	.. ..	1868	I	250	Dec. '97	
Catholic	Sun Prairie, Dane Co.	B	.. ..	1886	O	450	.. ..
Methodist Episcopal	Sun Prairie, Dane Co.	B	.. ..	1874	I	300	.. ..
Presbyterian	Sun Prairie, Dane Co.	F	.. ..	1886	O	300	.. ..
Baptist	Sparta, Monroe Co.	B	3 D	1895	I	.. ..	Nov. '97	S O
Congregational	Sparta, Monroe Co.	B	4 D	1891	O & I	.. ..	.. ..	S O
St. Abasins Catholic	Sauk City, Sauk Co.	B	3 D	1860	O	600	July '98	
Baptist	Sauk City, Sauk Co.	F	.. ..	1892	..	400	Dec. '97	
Congregational	Tomah, Monroe Co.	F	.. ..	1877	I	200	.. ..
Episcopal	Tomah, Monroe Co.	F	.. ..	1889	O	300	.. ..
Lutheran	Tomah, Monroe Co.	B	.. ..	1890	O	300	.. ..
Methodist Episcopal	Tomah, Monroe Co.	F	.. ..	1894	O	400	.. ..
Evangelical	Two Rivers, Manitowoc Co.	B	2 D	1884	..	225	Aug. '97	
Evangelical Lutheran	Two Rivers, Manitowoc Co.	B	3 D	1889	..	200	.. ..
St. Luke's Catholic	Two Rivers, Manitowoc Co.	B	4 D	1891	..	1,200	.. ..
Congregational	Viroqua, Vernon Co.	F	3 D	1897	..	.. ..	Nov. '97	
Episcopal	Viroqua, Vernon Co.	F	2 D	1889	..	.. ..	.. ..
German Lutheran	Viroqua, Vernon Co.	F	3 D	1893	I	.. ..	.. ..
First Baptist	Wausau, Marathon Co.	B	3 D	1887	O	.. ..	Nov. '97	
First German Baptist	Wausau, Marathon Co.	F	2 D	.. ..	I	.. ..	.. ..
First Presbyterian	Wausau, Marathon Co.	B	.. ..	1896	O	.. ..	.. ..
Methodist Episcopal	Wausau, Marathon Co.	B	.. ..	1884	..	.. ..	.. ..
St. John's Episcopal	Wausau, Marathon Co.	..	3 D	1888	I	.. ..	.. ..
St. Mary's Catholic	Wausau, Marathon, Co.	B	3 D	1894	O	.. ..	.. ..
St. Michael's Polish Catholic	Wausau, Marathon, Co.	B	.. ..	1895	..	.. ..	.. ..
St. Paul Evang.	Wausau, Marathon, Co.	B	.. ..	1886	..	.. ..	.. ..
St. Stephen's Evang. Lutheran	Wausau, Marathon, Co.	F	2 D	.. ..	..	.. ..	.. ..
Swedish M. E.	Wausau, Marathon, Co.	B	.. ..	1887	..	.. ..	.. ..
Universalist	Wausau, Marathon Co.	F	.. ..	.. ..	I	.. ..	.. ..
Zions Church	Wausau, Marathon Co.	B	3 D	1884	O	.. ..	.. ..
Catholic	Wauzeka, Crawford Co.	F	2 D	1868	I	125	July '98	
German Lutheran	Wauzeka, Crawford Co.	F	1 D	1890	O	75	.. ..
German Methodist	Wauzeka, Crawford Co.	F	1 D	1870	I	150	.. ..

INSPECTION OF CHURCHES—Continued.

Name of Church.	Location.	Frame, brick, stone.	Means of escape.	When erected.	Do doors swing in or out.	Seating capacity.	Date of inspection.	Orders.
Episcopal	Washburn, Bayfield Co.....	F	.....	1892	O	175	Sep. '97	.....
German Lutheran	Washburn, Bayfield Co.....	F	.....	1890	..	150	.. ..	.....
Methodist Episcopal	Washburn, Bayfield Co.....	F	.....	1895	..	275	.. ..	.....
Norwegian	Washburn, Bayfield Co.....	F	.....	1897	..	250	.. ..	.....
St. Louis Catholic	Washburn, Bayfield Co.....	F	.....	1891	..	270	.. ..	.....
Swedish	Washburn, Bayfield Co.....	F	.....	1890	..	100	.. ..	.....
Episcopal	Waterloo, Jefferson Co.....	F	1 D	1834	I	175	Nov. '97	.....
Lutheran	Waterloo, Jefferson Co.....	B	2 D	1882	O	300	.. ..	.....
Methodist Episcopal	Waterloo, Jefferson Co.....	B	2 D	1856	..	300	.. ..	.....
Presbyterian	Waterloo, Jefferson Co.....	B	.....	1856	..	350	.. ..	.....
St. Joseph's Catholic.....	Waterloo, Jefferson Co.....	B	2 D	1871	..	350	.. ..	.....
Brudergemeinde	Watertown, Jefferson Co.....	B	2 D	1864	I	250	Aug. '97	.....
Congregational	Watertown, Jefferson Co.....	F	2 D	1875	..	225	.. ..	S O
Catholic	Watertown, Jefferson Co.....	B	2 D	1873	..	1,500	.. ..	S O
Episcopal	Watertown, Jefferson Co.....	B	.....	1876	..	250	.. ..	S O
Evang. Lutheran	Watertown, Jefferson Co.....	B	4 D	1887	O	500	.. ..	.....
Evang. Reformed	Watertown, Jefferson Co.....	F	2 D	1895	I	200	.. ..	.....
German M. E.	Watertown, Jefferson Co.....	B	2 D	1869	..	200	.. ..	S O
German Protestant	Watertown, Jefferson Co.....	B	2 D	1866	..	200	.. ..	S O
Methodist Episcopal	Watertown, Jefferson Co.....	B	2 D	1873	..	250	.. ..	S O
St. Henry's Catholic.....	Watertown, Jefferson Co.....	B	4 D	1862	O	1,200	.. ..	.....
Baptist	Waukesha, Waukesha Co.....	S	2 D	1871	..	250	June '97	.....
Congregational	Waukesha, Waukesha Co.....	S	2 D	1867	I	300	.. ..	.....
Episcopal	Waukesha, Waukesha Co.....	S	2 D	1859	I	600	.. ..	S O
Evangelical	Waukesha, Waukesha Co.....	B	1 D	1866	I	100	.. ..	.....
German Reformed	Waukesha, Waukesha Co.....	B	2 D	1866	O	200	.. ..	.....
Methodist Episcopal	Waukesha, Waukesha Co.....	B	2 D	1895	O	1,800	.. ..	.....
Presbyterian	Waukesha, Waukesha Co.....	B	2 D	1891	..	400	.. ..	.....
St. Joseph's Catholic	Waukesha, Waukesha Co.....	S	2 D	1888	..	1,200	.. ..	.....
Congregational	Waupun, Fond du Lac Co.....	F	.....	1891	..	.....	Dec. '97	.....
Dutch Reform	Waupun, Fond du Lac Co.....	F	.....	1887	I	.....	.. ..	.....

Episcopal	Waupun, Fond du Lac Co.....	F		1871	O		Dec. '97	
Lutheran	Waupun, Fond du Lac Co.....	F		1857	I	200	.. ..
Methodist Episcopal	Waupun, Fond du Lac Co.....	F		1889	O		.. ..
St. Joseph's Catholic	Waupun, Fond du Lac Co.....	F		1865	O	300	.. ..
Episcopal	West Bend, Washington Co.....	S	2 D	1897	O	200	Sep. '97	
Evang. Lutheran	West Bend, Washington Co.....	B	3 D	1864	O	600	.. ..
Evang. Lutheran	West Bend, Washington Co.....	F	1 D	1892	I	150	.. ..	S O
Holy Angel Catholic	West Bend, Washington Co.....	B	3 D	1866	I	1,200	.. ..
Methodist Episcopal	West Bend, Washington Co.....	B	2 D	1887	O	175	.. ..
Methodist Episcopal	West Bend, Washington Co.....	B	2 D	1884	I	250	.. ..	S O
Methodist Episcopal	Weyerhauser, Barron Co.....	F		1893	O	350	Nov. '97	
German Lutheran	Wittenburg, Shawano Co.....	F	2 D	1890	..	150	.. ..
Methodist Episcopal	Wittenburg, Shawano Co.....	F	2 D	1890	..	150	.. ..
Norwegian Lutheran	Wittenburg, Shawano Co.....	F	1 D	1890	..	150	.. ..
Baptist	Whitewater, Walworth Co.....	S	4 D	1886	..	800	.. ..
Congregational	Whitewater, Walworth Co.....	F	4 D	1881	I	1,200	.. ..	S O
Evangelical	Whitewater, Walworth Co.....	F	1 D	1869	I	100	.. ..
Lutheran	Whitewater, Walworth Co.....	F	2 D	1877	O	300	.. ..	S O
Methodist Episcopal	Whitewater, Walworth Co.....	B	2 D	1872	O	1,000	.. ..
Norwegian Lutheran	Whitewater, Walworth Co.....	F	2 D	1879	I	150	.. ..
St. Luke's Catholic	Whitewater, Walworth Co.....	F	2 D	1869	..	400	.. ..	S O
St. Patrick's Catholic	Whitewater, Walworth Co.....	F	3 D	1879	..	800	.. ..	S O
Universalist	Whitewater, Walworth Co.....	F	2 D	1868	..	450	.. ..	S O
Norwegian Lutheran	Westby, Vernon Co.....	F	1 D	1892	O		.. ..

INSPECTION OF CHURCHES.

INSPECTION OF SCHOOLS.

The factory inspectors reported on 330 schools in the biennial period covered by this report and reported on their sanitary condition, facilities for escape in case of stampede or fire and other points required by law. Their reports show that the average school building in the state is two stories high, as the buildings are divided into 16.4 per cent. one story high; 74.8 per cent. two stories; 6.9 per cent. three stories, and 1.8 per cent. were not answered on this question. That the school buildings are generally substantially built is evident by the fact that 217 of those visited were built of brick, 11 of stone, and 102 of frame.

While giving careful attention to the sanitary condition of the schools, which was as a rule first-class, especial attention was paid to means of escape. Fire escapes were reported on 29 buildings, which goes to show that the three-story school buildings are supplied with suitable provisions in case of fire. Returns were not made as to the doors on 106 buildings, but the remaining 224 structures have 529 doors.

Strict attention was paid to the means of exit and returns were sent to this office of 247 schools where the doors swung out according to law, but 80 had doors that swung in and 3 were not answered on this question. Orders were given for one fire escape and for changes to be made in 27 doors to allow them to swing out. When the conditions required it other suggestions were made for better ventilation and other improvements.

The seating capacity furnished by 283 of the schools visited is 96,810, and 220 buildings have 56,105 pupils. It will be noticed by a glance at the table that the seating capacity of the schools is but little ahead of the number of pupils, but this is a natural result when the rapid growth of the school system in the state is considered.

The same abbreviations have been used in this table as in the table relating to churches.

INSPECTION OF SCHOOLS.

Name of School.	Location.	Size of building.	Frame, brick, stone.	MEANS OF ESCAPE.		When erected.	Do doors swing in or out.	Number of pupils.	Seating capacity.	Date of inspection.	Orders.
				Doors.	Fire escapes.						
Public	Albany Green Co.....	2 2 2	B	2	.....	1865	I	300	350	Dec. '97	2 O
Algoma Public	Algoma, Kewaunee Co.....	2 2 2	..	2	.....	1886	O	290	290	July '97	.....
Algoma Catholic	Algoma, Kewaunee Co.....	2 2 2	..	2	.....	1891	O	.....	200	.....	.....
St. Mary's Catholic	Algoma, Kewaunee Co.....	1 2 2	F	2	.....	1873	O	200	500	.....	.....
St. Paul Lutheran	Algoma, Kewaunee Co.....	2 2	B	1	.....	1886	I	100	100	.....	2 O
Amery Graded	Amery, Polk Co.....	2 2 2	..	.....	.....	1894	I	217	230	.....	.....
Public	Antigo, Langlade Co.....	2 2 2	..	3	.....	1896	O	.....	250	Nov. '97	.....
Public	Antigo, Langlade Co.....	2 2 2	..	3	.....	1896	O	375	400	.....	.....
Public	Antigo, Langlade Co.....	2 2 2	..	3	.....	1893	O	325	400	.....	.....
Lutheran N. A. C.....	Antigo, Langlade Co.....	1 2	F	1	.....	1877	I	.....	50	.....	.....
St. Johns Catholic	Antigo, Langlade Co.....	2 2 2	B	3	.....	1890	O	.....	300	.....	.....
Public	Appleton, Outagamie Co.....	2 2 2	..	3	.....	1887	O	.....	450	Sep. '97	.....
Public	Appleton, Outagamie Co.....	2 2 2	..	2	.....	1897	O	.....	700	.....	.....
Public	Appleton, Outagamie Co.....	2 2 2	..	2	.....	1864	I	.....	300	.....	.....
Ryan High School.....	Appleton, Outagamie Co.....	2 2 2	..	3	.....	1886	O	800	800	.....	.....
St. Mary's Catholic	Appleton, Outagamie Co.....	2 2	..	3	.....	1888	O	.....	450	.....	.....
St. Joseph's Catholic	Appleton, Outagamie Co.....	2 2 2	..	4	.....	1880	O	.....	750	.....	.....
St. Paul Lutheran	Appleton, Outagamie Co.....	2 2 2	..	2	.....	1893	O	350	500	.....	.....
Third Ward Public	Appleton, Outagamie Co.....	2 2 2	..	4	.....	1890	O	.....	850	.....	.....
Our Lady of Perpetual Help.....	Arcadia, Trempealeau Co.....	2 2	F	.....	.....	1895	O	191	191	Dec. '97	.....
Amberg School	Amberg, Marinette Co.....	.....	.....	.....	.....	1887	O	.....	.....	Oct. '97	.....
Public	Bangor, La Crosse Co.....	.....	.....	.....	.....	1884	I	230	250	June '97	2 O
Public	Bayfield, Bayfield Co.....	.....	F	.....	.....	1894	O	134	173	Sep. '97	.....
Public	Beaver Creek, Outagamie Co.....	.....	F	1	.....	1895	O	100	200	Oct. '97	.....
St. Mary's Catholic	Beaver Creek, Outagamie Co.....	2 2	B	3	.....	1890	O	200	250	.....	.....
Fourth Ward.....	Beaver Dam, Dodge Co.....	2 2	..	.....	.....	1878	I	250	.....	Dec. '97	2 O
First Ward	Beaver Dam, Dodge Co.....	2 2	..	.....	.....	.....	I	150	.....	.....	2 O
High School	Beaver Dam, Dodge Co.....	2 2	..	.....	.....	1892	O	160	.....	.....	.....

INSPECTION OF SCHOOLS.

INSPECTION OF SCHOOLS—Continued.

Name of School.	Location.	Size of building.	Frame, brick stone.	MEANS OF ESCAPE.		When erected.	Do doors swing in or out.	Number of pu- pils.	Seating capacity.	Date of inspec- tion.	Orders.
				Doors.	Fire es- capes						
Third Ward	Beaver Dam, Dodge Co.....	2 2 2	B	.....	.....	1872	O	150	.....	.....	.....
Union High School.....	Beaver Dam, Dodge Co.....	2 2 2	.....	.....	.....	1871	I	200	.....	.....	S O
High School	Beloit, Rock Co.....	2 2 2	.....	3	.....	1886	O	450	500	Oct. '97	.....
Public School	Beloit, Rock Co.....	2 2 2	.....	4	.....	.....	O	.....	500	.....	.....
Public School	Beloit, Rock Co.....	2 2 2	Z	4	.....	1877	O	.....	350	.....	.....
Second Ward School	Beloit, Rock Co.....	2 2 2	B	2	.....	1888	O	.....	450	.....	.....
Public	Benoit, Bayfield Co.....	1 2 2	F	.....	.....	1892	O	30	33	Sep. '97	.....
Catholic	Berlin, Green Co.....	2 2 2	B	.....	.....	1893	I	100	.....	Dec. '97	.....
High School	Berlin, Green Co.....	2 2 2	F	.....	1	1867	O	510	.....	.....	.....
West Side High.....	Berlin, Green Co.....	2 2 2	.....	.....	.....	1866	O	250	.....	.....	.....
Public	Biramwood, Shawano Co.....	2 2 2	.....	2	.....	1895	O	175	200	Nov. '97	.....
Catholic	Brillion, Calumet Co.....	2 2 2	.....	2	.....	1878	I	.....	125	.....	.....
Public	Brillion, Calumet Co.....	2 2 2	.....	3	.....	1887	O	.....	250	.....	.....
Public	Brillion, Calumet Co.....	1 1 2	.....	2	.....	1878	I	.....	100	.....	.....
Public	Brodhead, Green Co.....	3 2 2	B	2	.....	1880	O	.....	400	Dec. '97	.....
Public	Brodhead, Green Co.....	2 2 2	.....	2	.....	1884	O	.....	250	.....	.....
Public	Burlington, Racine Co.....	2 2 2	.....	3	.....	1896	O	.....	1000	.....	.....
St. Mary's Catholic.....	Burlington, Racine Co.....	2 2 2	S	4	.....	1852	I	450	600	Aug. '97	S O
St. Johannes	Burlington, Racine Co.....	1 1 2	B	2	.....	1892	O	100	125	.....	.....
High School	Boscobel, Grant Co.....	2 2 2	F	3	.....	1898	O	.....	400	July '98	.....
Public	Boscobel, Grant Co.....	2 2 2	.....	3	.....	1858	O	.....	150	.....	.....
Evang. Lutheran	Cedarburg, Ozaukee Co.....	2 2 2	.....	1	.....	1895	O	200	250	July '97	.....
Lutheran Trinity	Cedarburg, Ozaukee Co.....	2 2 2	S	2	.....	1882	I	75	125	.....	.....
Public	Cedarburg, Ozaukee Co.....	2 2 2	.....	3	.....	1895	O	275	450	.....	.....
Public	Chilton, Calumet Co.....	2 2 2	.....	2	.....	1870	O	.....	400	Aug. '97	.....
St. Augustine	Chilton, Calumet Co.....	2 2 2	B	2	.....	1878	O	.....	200	.....	.....
St. Mary's Catholic	Chilton, Calumet Co.....	2 2 2	.....	4	.....	1887	O	375	500	.....	.....

Public High	Columbus, Columbia Co.	2 2 2 2	B	2	1895	O	450	Dec. '97
German Lutheran	Columbus, Columbia Co.	2 2 2 2	F		1897	O	100	
Evang. Lutheran	Clintonville, Waupaca Co.	2 2 2 2	F	2	1880	I	250	
Public	Clintonville, Waupaca Co.	2 2 2 2	B	2	1895	O	450	Oct. '97
Public	Cashton, Monroe Co.	2 2	B		1882	O	110	Nov. '97
Public	Cudahy, Milwaukee Co.	2 2 2	..	2	1895	O	300	May '97
Public	Darlington, Lafayette Co.	2 2 2 2	F	2	1888	O	200	Nov. '97
Public	Darlington, Lafayette Co.	2 2 2 2	S	3	1868	I	400	S O
Public	Delavan, Walworth Co.	2 2 2 2	B	6	1892	O	550	Oct. '97
Public	Edgerton, Rock Co.	2 2	..	2	1892	O	400	Nov. '97
Public	Eland Junction, Shawano	2 2	..	1	1897	O	175	
Public	Elkhorn, Walworth Co.	2 2 2	..	3	1887	O	475	Oct. '97
Public	Embarrass, Waupaca Co.	2 2 2	F	3	1889	I	200	
High School	Fairchild, Eau Claire Co.	2 2 2	..		1895	O	300	Sept. '97
Public	Fairchild, Eau Claire Co.	1 2	..		1896	O	60	75
High School	Fox Lake, Dodge Co.	2 2	B		1887	O	300	Dec. '97
German Lutheran	Fort Atkinson, Jefferson Co.	1 2	F	1	1887	I	75	Oct. '97
High School	Fort Atkinson, Jefferson Co.	2 2	B	4		O	400	400
Public	Fort Atkinson, Jefferson Co.	2 2	..	4	1883	O	200	200
Clinton	Fond du Lac, Fond du Lac Co.	1 2	F		1865	I	38	45
Fifth Ward School	Fond du Lac, Fond du Lac Co.	1 2	..		1883	O	90	90
First School	Fond du Lac, Fond du Lac Co.	1 1/2 2	..		1875	O	225	250
Grant School	Fond du Lac, Fond du Lac Co.	1 2	..		1889	O	130	160
High School	Fond du Lac, Fond du Lac Co.	2 1/2 2	B		1872	O	350	450
Lincoln School	Fond du Lac, Fond du Lac Co.	2 2	..		1896	O	120	160
Main Street School	Fond du Lac, Fond du Lac Co.	1 2	F		1879	O	125	125
Second Ward School	Fond du Lac, Fond du Lac Co.	1 1/2 2	..		1879	O	80	80
Union School	Fond du Lac, Fond du Lac Co.	2 1/2 2	B		1895	O	365	365
Washington School	Fond du Lac, Fond du Lac Co.	2 1/2 2	..		1896	O	475	550
Catholic School	Green Bay, Brown Co.	2 2	..	2	1876	I	500	Aug. 97
High School	Green Bay, Brown Co.	2 2	..	4	1887	O	700	
German Lutheran School	Green Bay, Brown Co.	2 2 2	..	2	1877	O	150	
Public School	Green Bay, Brown Co.	2 2 2	..	4	1881	O	475	
Public School	Green Bay, Brown Co.	2 2 2	..	2	1877	O	400	
Public School	Green Bay, Brown Co.	2 2	..	3	1896	O	600	
Public School	Green Bay, Brown Co.	2 2	..	3	1887	O	600	Aug. '97
Public School	Green Bay, Brown Co.	2 2 2	..	3	1867	O	400	800
St. John's Catholic	Green Bay, Brown Co.	2 2	..	2	1890	O		800
St. Paul Lutheran	Green Bay, Brown Co.	1 2	F	1	1883	I	50	65
St. Vincent Holland	Green Bay, Brown Co.	2 2	B	2	1880	O		450

INSPECTION OF SCHOOLS.—Continued.

Name of School.	Location.	Size of building.	Frame, brick, stone.	MEANS OF ESCAPE.		When erected.	Do doors swing in or out.	Number of pupils.	Seating capacity.	Date of inspection.	Orders.
				Doors.	Fire escapes.						
Public	Grafton, Ozaukee Co.	1 2/2	F	2	.....	1881	O	75	75	July '97	.....
St. Paul Lutheran	Grafton, Ozaukee Co.	2 2/2	.....	2	.....	1890	O	.....	75	.....	.....
Public	Hawthorne, Douglas Co.	2 2/2 2/2	.....	.....	.....	1885	I	86	85	Oct. '97	.....
Public	Hartford, Washington Co.	2 2/2	B	2	.....	1893	O	.....	600	Aug. '97	.....
Public	Hartford, Washington Co.	2 2/2	.....	1	.....	.....	I	.....	275	.....	.....
St. Killian	Hartford, Washington Co.	2 2/2	.....	1	.....	1880	O	.....	150	.....	.....
Public	Houghton, Bayfield Co.	1 2/2	F	.....	.....	1893	.....	20	80	Sept. '97	.....
Public	Horicon, Dodge Co.	2 2/2	B	.....	.....	.....	I O	236	.....	Dec. '97	.....
Evang. Lutheran	Hortonville, Outagamie Co.	1 2/2	F	2	.....	1880	O	125	150	Oct. '97	.....
Public	Hortonville, Outagamie Co.	2 2/2	.....	1	.....	1875	I	.....	175	.....	.....
Polish Catholic	Independence, Trempealeau Co.	2 2/2	B	.....	.....	1890	O	200	225	Dec. '97	.....
Public	Independence, Trempealeau Co.	2 2/2	.....	2	.....	1892	O	.....	158	.....	.....
United Norwegian Lutheran	Independence, Trempealeau Co.	1 2/2	F	.....	.....	1887	O	75	150	.....	.....
Evang. Lutheran	Jefferson, Jefferson Co.	1 2/2	B	1	.....	1880	I	100	150	Oct. '97	.....
Public	Jefferson, Jefferson Co.	2 2/2	.....	2	.....	1878	O	.....	250	.....	.....
Public	Jefferson, Jefferson Co.	2 2/2	B	4	1	1880	O	.....	600	Oct. '97	.....
St. Johannes Catholic	Jefferson, Jefferson Co.	2 2/2	.....	2	.....	1885	O	.....	200	.....	.....
Holy Cross	Kaukauna, Outagamie Co.	2 2/2 2/2	.....	2	.....	1886	O	300	450	Sept. '97	.....
Lutheran	Kaukauna, Outagamie Co.	1 2/2	.....	2	.....	1878	I	75	125	.....	.....
Public	Kaukauna, Outagamie Co.	2 2/2	.....	3	.....	1890	O	.....	800	.....	.....
Public	Kaukauna, Outagamie Co.	2 2/2	.....	3	.....	1897	O	.....	650	.....	.....
Holy Rosary Catholic	Kewaunee, Kewaunee Co.	2 2/2	.....	2	.....	1880	I	100	150	July '97	.....
Lutheran	Kewaunee, Kewaunee Co.	1 2/2	F	2	.....	1881	I	100	125	.....	.....
Public	Kimball, Iron Co.	1 2/2	.....	.....	.....	1887	I	10	24	Nov. '97	S O
Public	Lake Mills, Jefferson Co.	2 2/2	B	2	.....	1892	O	200	200	.....	.....
Public	Lake Mills, Jefferson Co.	2 2/2	.....	2	.....	1868	I	150	150	.....	.....
St. John's Catholic	Little Chute, Outagamie Co.	2 2/2	.....	2	.....	1885	I	.....	200	Sept. '97	S O
Fifth Ward	La Crosse, La Crosse Co.	2 2/2 2/2	.....	.....	.....	1875	O	400	450	Mch. '97	.....
German Lutheran	La Crosse, La Crosse Co.	1 2/2	.....	.....	.....	1888	O	46	46	.....	.....

Logan Street	La Crosse, La Crosse Co.....	2 S	..	..	..	1891	O	400	450	..	..	..
Lutheran	La Crosse, La Crosse Co.....	1 S	..	..	..	1875	O	200	250	..	..	..
St. James	La Crosse, La Crosse Co.....	2 S	..	..	..	1886	O	105	150	..	..	..
St. Marys	La Crosse, La Crosse Co.....	2 S	..	..	..	1872	O	110	120	..	..	..
St. Michael's Orphan Asylum	La Crosse, La Crosse Co.....	2 S	..	..	..	1875	I	95	100	..	..	..
St. Ames' Orphan Asylum.....	La Crosse, La Crosse Co.....	2 S	..	..	..	1889	I	90	100	..	..	..
Seventh District	La Crosse, La Crosse Co.....	2 S	..	..	..	1887	O	598	598	..	..	..
The Little White School.....	La Crosse, La Crosse Co.....	1 S	F	..	..	1891	O	110	120	..	..	..
Wood Street	La Crosse, La Crosse Co.....	1 S	..	..	..	..	O	80	100	..	..	..
Loyal Public	Loyal, Clark Co.....	2 S	B	..	..	1885	I	200	225	June '98	S O	..
District No. 4.....	Manitowoc, Manitowoc Co.....	2 S	..	2	..	1897	O	300	300	Aug. '97	S O	..
Evang. Lutheran	Manitowoc, Manitowoc Co.....	2 S	..	4	..	1891	O	600	800	..	..	..
High School	Manitowoc, Manitowoc Co.....	3 S	..	3	2	1872	O	..	600	..	..	..
Public School	Manitowoc, Manitowoc Co.....	2 S	..	4	..	1882	O	800	800	..	..	..
Sixth Ward	Manitowoc, Manitowoc Co.....	2 S	..	2	..	1892	O	650	850	..	..	..
Third Ward	Manitowoc, Manitowoc Co.....	2 S	..	2	..	1891	O	..	900	..	..	..
St. Boniface Catholic	Manitowoc, Manitowoc Co.....	2 S	..	2	..	1887	O	..	800	..	..	..
St. Mary Catholic.....	Manitowoc, Manitowoc Co.....	2 S	F	2	..	..	O	..	200	..	..	..
Garfield	Marinette, Marinette Co.....	2 S	..	4	..	1890	O	..	600	Oct. '97	..	..
Lincoln	Marinette, Marinette Co.....	2 S	..	2	..	1893	O	..	600	..	..	..
Public	Marinette, Marinette Co.....	2 S	B	2	..	1895	O	600	650	..	..	..
Public	Marinette, Marinette Co.....	2 S	..	2	..	1894	O	..	800	..	..	..
Our Lady of the Lord.....	Marinette, Marinette Co.....	2 S	..	2	..	1888	O	275	300	..	..	..
Union School	Marinette, Marinette Co.....	2 S	..	3	..	1885	O	..	800	..	..	..
Public	Mason, Bayfield Co.....	2 S	F	..	..	1897	I	90	90	..	..	S O
Lutheran	Mayville, Dodge Co.....	2 S	..	..	..	1893	O	..	200	Dec. '97	..	..
Public	Mayville, Dodge Co.....	2 S	S	..	..	1880	O	400	..	..	..	..
High School	Medford, Taylor Co.....	2 S	B	..	..	1888	O	300	325	Nov. '97	..	..
Second Ward School	Medford, Taylor Co.....	1 S	F	..	..	1895	O	46	75	..	..	..
West Side School.....	Medford, Taylor Co.....	2 S	..	..	..	1877	I	139	160	..	..	..
High School	Menasha, Winnebago Co.....	2 S	B	4	..	1896	O	..	800	Sept. '97	..	..
Public	Menasha, Winnebago Co.....	2 S	..	2	..	1895	O	..	225	..	..	..
Public	Menasha, Winnebago Co.....	2 S	..	2	..	1888	O	..	400	..	..	..
St. Patrick's Catholic.....	Menasha, Winnebago Co.....	2 S	..	..	..	1880	I	325	450	..	..	S O
St. Mary's Catholic	Menasha, Winnebago Co.....	2 S	..	2	..	1893	O	500	650	..	..	..
German Lutheran	Menomonee, Dunn Co.....	1 S	F	..	..	1891	I	102	105	Aug. '97	..	..
St. Paul Lutheran	Menomonee, Dunn Co.....	1 S	..	..	..	1880	I	75	80	..	..	..
Concordia College.....	Milwaukee, Milwaukee Co.....	2 S	B	4	2	1882	O	85	130	Jan. '97	..	..
Concordia College No. 2.....	Milwaukee, Milwaukee Co.....	2 S	..	3	3	1890	O	60	60	..	..	..

INSPECTION OF SCHOOLS.—Continued

Name of School.	Location.		Size of building.	Frame, brick, stone.	MEANS OF ESCAPE.		When erected.	Do doors swing in or out	Number of pupils.	Seating capacity.	Date of inspection.	Orders.
					Door.	Fire escapes.						
Concordia College No. 3.....	Milwaukee,	Milwaukee Co.....	2 2 2	F	1	1	1887	O	70	.....	..	..
Fifteenth District	Milwaukee,	Milwaukee Co.....	2 2 2	B	2	2	1885	O	525	550	..	..
Fifteenth District	Milwaukee,	Milwaukee Co.....	2 2 2	..	3	..	1892	O	475	500	..	..
Fifteenth District	Milwaukee,	Milwaukee Co.....	2 2 2	..	2	..	1888	O	525	525	..	..
Holy Name	Milwaukee,	Milwaukee Co.....	2 2 2	F	2	..	1876	O	200	200	..	..
Holy Name	Milwaukee,	Milwaukee Co.....	2 2 2	B	3	..	1870	O	100	125	..	..
Holy Rosary	Milwaukee,	Milwaukee Co.....	2 2 2	..	1	..	1893	O	150	200	..	..
Holy Paul	Milwaukee,	Milwaukee Co.....	2 2 2	..	2	..	1885	O	130	180	..	..
Jesu	Milwaukee,	Milwaukee Co.....	2 2 2	..	4	3	1870	I	200	200	..	..
North Milwaukee.....	Milwaukee,	Milwaukee Co.....	2 2 2	..	2	..	1891	O	600	700	May '97	..
South Milwaukee	Milwaukee,	Milwaukee Co.....	2 2 2	..	3	..	1893	O	400	450	..	..
Second District	Milwaukee,	Milwaukee Co.....	2 2 2	..	2	..	1866	O	250	250	Jan. '97	..
Second District	Milwaukee,	Milwaukee Co.....	3 2 2	B	3	1	1889	O	900	900	..	..
Sixth District	Milwaukee,	Milwaukee Co.....	2 2 2	..	3	3	1886	O	725	725	..	..
St. Johannes	Milwaukee,	Milwaukee Co.....	2 2 2	..	2	..	1887	O	300	400	..	..
St. Mathews	Milwaukee,	Milwaukee Co.....	1 2 2	..	2	..	1865	O	325	350	..	..
St. Marcus	Milwaukee,	Milwaukee Co.....	2 2 2	F	3	2	1894	O	340	600	..	..
St. Paul	Milwaukee,	Milwaukee Co.....	2 2 2	B	2	..	1889	O	550	575	..	..
St. Paul Chapel	Milwaukee,	Milwaukee Co.....	2 2 2	..	3	..	1889	O	140	150	..	..
St. Rose	Milwaukee,	Milwaukee Co.....	2 2 2	..	3	..	1893	O	230	250	..	..
Public	Milwaukee,	Milwaukee Co.....	2 2 2	B	3	..	1888	O	350	350	Nov. '97	..
Public	Mineral Point,	Iowa Co.....	1 2 2	..	2	..	1877	O	600	600	..	..
Public	Mineral Point,	Iowa Co.....	1 2 2	F	2	..	1878	I	100	100	..	..
Public	Monroe,	Green Co.....	2 2 2	B	2	..	1883	O	400	400	Dec. '97	..
Public	Monroe,	Green Co.....	2 2 2	..	2	..	1895	O	200	250	..	..
Public	Monroe,	Green Co.....	2 2 2	B	2	..	1892	O	350	350	Dec. '97	..
Public	Monroe,	Green Co.....	2 2 2	..	3	..	1871	O	350	350	..	..
Public	Marion,	Waupaca Co.....	2 2 2	F	3	..	1884	O	200	200	Nov. '97	..
Public	Monticello,	Green Co.....	1 2 2	..	2	..	1891	I	200	200	Dec. '97	S O

Public	Merrill, Lincoln Co.	1 S	F	1872	O	420	Nov. '97	
High School	Mauston, Juneau Co.	2 S	B		O	380	Dec. '97	
St. Patrick's	Mauston, Juneau Co.	2 S	F		O	100	Nov. '97	
Public	Mauston, Juneau Co.	2 S	F	1894	O	100	Oct. '97	S O
Mosinee School	Mosinee, Marathon Co.	2 S	F	1874	I	100	Oct. '97	
St. Johns Catholic	Marshfield, Wood Co.	2 1/2 S	B	1897	O	466	586	Feb. '98
Fifth Ward Public	Madison, Dane Co.	2 S	..	1870	I	403	415	Mch. '98
First Ward Public	Madison, Dane Co.	2 1/2 S	..		O	245	290	..
Fourth Ward Public	Madison, Dane Co.	2 1/2 S	..	1866	I	196	200	..
Greenbush Public	Madison, Dane Co.	2 S	..	1891	O	84	89	..
Holy Redeemer Catholic	Madison, Dane Co.	2 1/2 S	..	1892	O	388	398	..
St. John's Lutheran	Madison, Dane Co.	1 S	F	1873	I	53	80	..
St. Raphael's Primary	Madison, Dane Co.	2 S	B	1870	O	165	180	..
St. Raphael's	Madison, Dane Co.	2 1/2 S	S	1893	O	140	150	S O
Second Ward Public	Madison, Dane Co.	2 S	..	1867	I	320	320	..
Sixth Ward Public	Madison, Dane Co.	2 S	..	1894	O	423	414	..
Third Ward Public	Madison, Dane Co.	2 S	..	1887	O	353	400	..
Catholic School	Mazomanie, Dane Co.	1 S	F	1	I	75	July '98	
Public School	Mazomanie, Dane Co.	2 S	B	5	I	325	Dec. '97	
Public School	Necedah, Juneau Co.	2 S	F		I		Sept. '97	
Fourth Ward School	Neenah, Winnebago Co.	1 S	..	2	I	300	..	
High School	Neenah, Winnebago Co.	2 S	B	3	O	800	..	
Second Ward School	Neenah, Winnebago Co.	2 S	..	3	O	600	600	..
Third Ward School	Neenah, Winnebago Co.	2 S	..	2	O	800	..	
Trinity Lutheran	Neenah, Winnebago Co.	2 S	..	1	O	200	225	..
Public	New London, Waupaca Co.	2 S	F	6	O	300	400	Oct. '98
St. Joseph's Catholic	New London, Waupaca Co.	2 S	B	2	I	275	300	..
Public	Norrie, Marathon Co.	1 S	F		O	150	150	Nov. '97
Nekoosa School	Nekoosa, Wood Co.	1 S	..	1	O	70	..	
High School	Oakfield, Fond du Lac Co.	2 S	..		O	199	200	July '97
Evang. Lutheran School	Oconto, Oconto Co.	1 S	..	1	O	175	85	Oct. '97
High School	Oconto, Oconto Co.	3 S	B		O	800	..	F E
Jefferson Public School	Oconto, Oconto Co.	2 S	..	2	I	150	200	..
Lincoln Public School	Oconto, Oconto Co.	2 S	F	2	O	225	250	..
Public School	Oconto, Oconto Co.	2 S	B	2	I	175	..	
St. Joseph's Catholic	Oconto, Oconto Co.	1 S	F	2	I	300	350	S O
Catholic Academy	Oshkosh, Winnebago Co.	3 S	B		O	600	900	Feb. '97
Eleventh Ward	Oshkosh, Winnebago Co.	2 S	..		O	425	500	..
Evang. Lutheran	Oshkosh, Winnebago Co.	2 S	F		O	113	130	..
First Ward	Oshkosh, Winnebago Co.	2 S	B		O	350	444	..

INSPECTION OF SCHOOLS.—Continued

Name of School.	Location.	Size of building.	Frame, brick, stone.	MEANS OF ESCAPE.		When erected.	Do doors swing in or out.	Number of pupils.	Seating capacity.	Date of inspection.	Orders.
				Doors.	Fire escapes.						
Fourth Ward	Oshkosh, Winnebago Co.....	2 S	B	.....	.....	1875	O	350	450	Feb. '97	.....
Fifth Ward	Oshkosh, Winnebago Co.....	2 S	..	.....	.....	1875	O	350	400	.. ..	.....
High School	Oshkosh, Winnebago Co.....	2 S	..	.....	.....	1867	O	375	500	.. ..	.....
Roman Catholic	Oshkosh, Winnebago Co.....	2 S	F	.....	.....	1875	I	200	200	.. ..	.....
Sixth Ward	Oshkosh, Winnebago Co.....	2 S	B	.....	.....	1869	O	300	350	.. ..	.....
Smith School	Oshkosh, Winnebago Co.....	2 S	..	.....	.....	1886	O	200	200	.. ..	.....
Twelfth Ward	Oshkosh, Winnebago Co.....	1 S	F	.....	.....	1871	O	100	150	.. ..	.....
Public School	Park Falls, Price Co.....	2 S	..	.....	.....	1896	O	117	150	Nov. '98	.....
Evang. Lutheran	Peshtigo, Marinette Co.....	1 S	..	1	.....	1871	I	50	50	Oct. '98	.....
Public School	Peshtigo, Marinette Co.....	2 S	..	2	.....	1897	O	.....	200	.. ..	.....
Public School	Peshtigo, Marinette Co.....	2 S	..	1	.....	1887	I	125	125	.. ..	.....
Public	Peshtigo, Marinette Co.....	2 S	F	1	.....	1889	O	125	125	Oct. '97	.....
St. Mary's Catholic.....	Peshtigo, Marinette Co.....	2 S	F	2	.....	1872	I	.....	100	.. ..	.....
Public	Platteville, Grant Co.....	2 S	B	2	.....	1877	O	200	250	Dec. '97	.....
Public	Platteville, Grant Co.....	2 S	..	3	.....	1884	O	.....	400	.. ..	.....
Public	Platteville, Grant Co.....	1 S	F	2	.....	1885	O	175	200	.. ..	.....
Evang. Lutheran	Plymouth, Calumet Co.....	2 S	..	2	.....	1890	O	.....	150	Aug. '97	.....
High School	Plymouth, Calumet Co.....	2 S	B	2	.....	1893	O	400	500	.. ..	.....
Public	Port Washington, Ozaukee Co.....	2 S	..	3	.....	1894	O	.....	600	.. ..	.....
Public	Port Washington, Ozaukee Co.....	2 S	..	1	.....	1894	O	.....	800	Aug. '97	.....
St. Mary's Catholic.....	Port Washington, Ozaukee Co.....	2 S	..	4	1	1895	O	300	350	.. ..	.....
Public	Prentice, Price Co.....	1 S	..	.....	.....	1892	O	100	130	Nov. '97	.....
Public	Phillips, Price Co.....	2 S	F	.....	.....	1894	O	450	450	.. ..	.....
High School	Prairie du Chien, Crawford Co.....	2 S	B	2	.....	1896	O	475	600	July '98	.....
Public	Prairie du Chien, Crawford Co.....	2 S	..	.....	.....	.....	I O	.....	500	.. ..	.....
St. Gabriel Catholic.....	Prairie du Chien, Crawford Co.....	2 S	..	2	.....	1892	O	275	300	.. ..	.....
Public	Reedsville, Manitowoc Co.....	2 S	..	1	.....	1895	O	.....	200	Nov. '97	.....

Public	Rib Lake, Taylor Co.	2	F	1894	O	180	180	Nov. '97	
Ripon College	Ripon, Fond du Lac Co.	3	Z	1858	I			Dec. '97	
Ripon College	Ripon, Fond du Lac Co.	3	Z	1855	O				
Ripon College	Ripon, Fond du Lac Co.	3	B	1887	O	14			
Ripon College	Ripon, Fond du Lac Co.	3		1867	O				
High School	Richland Center, Richland Co.	3		1885	O		600	July '97	
Public School	Richland Center, Richland Co.	3	F		O		250		
Saxon School	Saxon, Iron Co.	1		1897	O		60	June '97	
Public School	Schlessingerville, Washington Co.	1	B	1881	O		200	Aug. '97	
St. Mary's Catholic	Schlessingerville, Washington Co.	2		1882	I		200		
Public	Seymour, Outagamie Co.	2	F	1892	O	250	260	Dec. '97	
Catholic	Shawano, Shawano Co.	2		1879	I		200	Oct. '97	S O
Public	Shawano, Shawano Co.	2	B	1893	O		400		
Public	Shullsburg, La Fayette Co.	2		1878	O	400	450	Dec. '97	
High School	Stoughton, Dane Co.	2		1892	O	225	250	Nov. '97	
Public	Stoughton, Dane Co.	2		1876	I		250		S O
Holy Guardian	Sturgeon Bay, Door Co.	2		1888	O	200	250	July '97	
Public	Sturgeon Bay, Door Co.	2		1886	O	200	300		
Public	Sturgeon Bay, Door Co.	2			O	175	250		
Public	Schofield	2	F	1873	I O		110	Oct. '97	
Public	Sun Prairie, Dane Co.	2	B	1868	I	200		Dec. '97	
St. Abasins Catholic	Sauk City, Sauk Co.	2		1862	O		250	July '98	
Public	Tigerton, Shawano Co.	2			O	150	200	Nov. '97	
Public	Tomah, Monroe Co.	2		1889	O	400		Dec. '97	
Evang. Lutheran	Two Rivers, Manitowoc Co.	1	F	1888	O	75	75	Aug. '97	
Public	Two Rivers, Manitowoc Co.	1		1862	O	600	650		
Public	Two Rivers, Manitowoc Co.	1	B	1892	O	150	175		
St. Lukes Catholic	Two Rivers, Manitowoc Co.	2	F	1878	I		100		
St. Lukes Catholic	Two Rivers, Manitowoc Co.	2		1887	O	200	250		
High School	Tomahawk, Lincoln Co.	1	B	1888	O	200		Nov. '97	
Public School	Tomahawk, Lincoln Co.	1	F	1887	O	100			
Third Ward	Tomahawk, Lincoln Co.	1		1892	O	200			
High School	Viroqua, Vernon Co.	2	S		O	235			
High School	Viroqua, Vernon Co.	2	S		O	200			
Catholic	Washburn, Bayfield Co.	1	F	1891	O	265	265	Sep. '97	
Public School	Waterloo, Jefferson Co.	3	B	1897	O	250		Dec. '97	
Public School	Waterloo, Jefferson Co.	3		1897	O		600		
Public School	Watertown, Jefferson Co.	2		1863	O	375	450	Aug. '97	
Public School	Watertown, Jefferson Co.	2		1883	O		600		
Public	Watertown, Jefferson Co.	2	B	1884	O		600	Aug. '97	

INSPECTION OF SCHOOLS—Continued.

Name of School.	Location.	Size of building.	Frame, brick, stone.	MEANS OF ESCAPE.		When erected.	Do doors swing in or out.	Number of pupils.	Seating capacity.	Date of inspection.	Orders.
				Doors.	Fire escapes.						
Public	Watertown, Jefferson Co.....	2 2 2 2	B	2	.....	1871	O	450	450	Aug. '97	.....
St. Bernard's Catholic.....	Watertown, Jefferson Co.....	2 2 2 2	.....	2	.....	1892	I	450	600	.....	.....
St. John's Lutheran	Watertown, Jefferson Co.....	2 2 2 2	.....	3	.....	1885	I	.....	350	.....	S O
St. Henry's Catholic.....	Watertown, Jefferson Co.....	2 2 2 2	.....	4	.....	1868	O	500	650	.....	.....
St. Marcus.....	Watertown, Jefferson Co.....	2 2 2 2	S	2	.....	1864	I	175	200	.....	S O
High School	Waukesha, Waukesha Co.....	2 1 2 2	S	5	.....	1893	O	.....	900	June '97	.....
St. Joseph's Catholic.....	Waukesha, Waukesha Co.....	2 2 2 2	.....	1	.....	1844	O	.....	150	.....	.....
North Ward	Waupun, Fond du Lac Co.....	2 2 2 2	B	2	.....	.....	.....	175	.....	Dec. '97	.....
South Ward.....	Waupun, Fond du Lac Co.....	2 2 2 2	.....	.....	.....	1872	O	334	.....	.....	.....
West Ward	Waupun, Fond du Lac Co.....	2 2 2 2	S	.....	.....	.....	I	80	.....	.....	.....
Evang. Lutheran	West Bend, Washington Co.....	2 2 2 2	F	1	.....	1887	I	200	225	Sep. '97	S O
Holy Angel School	West Bend, Washington Co.....	2 2 2 2	B	2	.....	1880	I	600	800	.....	S O
Public	West Bend, Washington Co.....	2 2 2 2	.....	3	.....	1895	O	450	600	.....	.....
Public	Weyerhauser, Barron Co.....	2 2 2 2	F	.....	.....	1895	I	65	111	Nov. '97	S O
Public	Whitcomb, Shawano Co.....	1 2 2 2	.....	1	.....	1895	O	100	125	.....	.....
Public	Whitewater, Walworth Co.....	2 2 2 2	B	3	2	1888	O	.....	450	.....	.....
Public	Westby, Vernon Co.....	2 2 2 2	F	1	.....	1895	O	175	.....	.....	.....
Columbia School	Wausau, Marathon Co.....	2 2 2 2	B	2	.....	1885	O	85	.....	.....	.....
Franklin School	Wausau, Marathon Co.....	2 2 2 2	B	2	.....	1894	O	289	.....	.....	.....
Grant School	Wausau, Marathon Co.....	2 2 2 2	.....	2	.....	1881	O	116	.....	.....	.....
High School	Wausau, Marathon Co.....	2 2 2 2	.....	3	.....	1889	O	292	.....	.....	.....
Humboldt School	Wausau, Marathon Co.....	2 2 2 2	.....	2	1	1871	O	267	.....	.....	.....
Irving School	Wausau, Marathon Co.....	2 2 2 2	.....	1	.....	1894	O	285	.....	.....	.....
Lincoln School	Wausau, Marathon Co.....	2 2 2 2	.....	1	.....	1892	O	265	.....	.....	.....
Longfellow School	Wausau, Marathon Co.....	2 2 2 2	.....	3	.....	1894	O	285	.....	.....	.....
Oral School for Deaf.....	Wausau, Marathon Co.....	2 2 2 2	F	.....	.....	.....	.....	10	.....	.....	.....
St. Mary's School	Wausau, Marathon Co.....	2 2 2 2	B	2	.....	1889	O	300	.....	.....	.....
Whiting School	Whiting, Portage Co.....	2 1 2 2	.....	2	.....	1897	O	16	40	Feb. '98	.....
High School	Weyauwega, Waupaca Co.....	2 2 2 2	F	2	.....	1863	I	124	140	.....	S O
Public	Wauzeka, Crawford Co.....	2 2 2 2	.....	2	.....	1871	I	.....	250	July '98	.....
Public	Wausaukee, Marinette Co.....	1 2 2 2	.....	.....	.....	1886	I	300	.....	Oct. '97	.....

INSPECTION OF HOTELS.

The inspectors looked over and reported on 69 hotels, and especial attention was given to their means of escape in case of fire. Many of the hotels in the state are known to be in first class condition from former reports and the inspectors were able to examine only those that had not been visited previously or were understood to be in need of improvements to comply with the laws. Orders were given to erect 10 fire escapes and to have 15 doors changed to swing outward. In 26 places orders were given to have means of escape posted in the hall ways and rooms.

A total of 2,880 rooms were divided as follows: first floor, 491; second floor, 1,228; third floor, 1,091, and fourth floor, 70. The hotels 2 stories high numbered 12; three stories high 50, and four stories high 7. The daily number of guests averaged 22 or a total of 1,517 for the 69 hotels. The number of servants employed by all these places is 626, and in the next column the location of the servants' rooms is given.

The abbreviations in this table indicating doors swinging in or out, kind of buildings, etc., are the same as used in the preceding tables and explained in Inspection of Churches.

INSPECTION OF HOTELS.

Name of Hotel.	Location of Hotel.	Height of building.	Stone, brick and wood.	Number of outer doors.	No. of Rooms.			
					First floor.	Second floor.	Third floor.	Fourth floor.
1 Commercial House....	Amberg	3	W	2	4	7	18	....
2 Twin Lake House....	Amery, Polk Co.....	2	W	2	7	....	....	....
3 The Vivian	Antigo, Langlade Co.....	2	B	2	5	17	18	....
4 Hotel Berg	Arcadia, Trempealeau Co.....	3	B	6	7	2	2	....
5 The Goodwin House ..	Beloit	4	B	4	6	....	65	....
6 Hotel Bellis	Berlin	3	B	7	9	25	25	....
7 Central Hotel	Chilton, Columbia Co.....	3	B	6	22	28	....	....
8 Taylor House	Chippewa Falls	3	B	11	9	28	32	....
9 Hotel Bertram	Delavan	3	B	3	23	30	....	....
10 Windsor Hotel	Fond du Lac.....	3	B	7	6	11	11	....
11 The Palmer Hotel ...	Fond du Lac.....	4	B S	4	13	44	42	....
12 Higbee House	Ft. Atkinson	3	B	4	....	17	17	....

INSPECTION OF HOTELS—Continued.

Name of Hotel.	Location of Hotel.	Height of building.	Stone, brick and wood.	Number of outer doors.	No. of Rooms.			
					First floor.	Second floor.	Third floor.	Fourth floor.
13 Hotel Mullen	Grafton	3	B	2	4	6	6	....
14 American House	Green Bay, Brown Co.	3	B	2	6	15	15	....
15 Commercial Hotel ...	Green Bay, Brown Co.	3	B	3	...	8	7	....
16 Hotel Freeman	Green Bay, Brown Co.	3	B	2	6	14	13	....
17 Hotel Ries	Green Bay, Brown Co.	3	B	3	4	10	10	....
18 The Burton House..	Hurley, Iron Co.	3	W	5	6	39	44	....
19 International Hotel ..	Independence, Buffalo Co	2	W	4	5	19	...	....
20 Hotel Law	La Crosse	3	B	9	7	25	28	....
21 Fay Hotel	La Crosse	3	B	4	4	8	10	....
22 Central House	La Crosse	3	B	3	4	14	16	....
23 Hotel Young	La Crosse	3	B	7	9	15	25	....
24 Park Hotel	La Crosse	3	B	4	4	9	18	....
25 Home Comfort Hotel.	La Crosse	2	B	5	5	18	...	....
26 Parker House	La Crosse	3	B	8	6	8	13	....
27 Cameron House	La Crosse	4	B	5	3	17	20	5
28 North Star Hotel.....	La Crosse	2	B	5	4	10	...	....
29 Hotel Bronson	La Crosse	3	B	6	3	14	13	....
30 Northwestern House.	Manitowoc	3	B	3	4	12	8	....
31 Williams House	Manitowoc	3	B	3	6	10	16	....
32 Elver House	Madison	3	B	7	12	24	24	....
33 Hotel Van Etta	Madison	3	S	5	15	15	14	....
34 Northwestern Hotel ..	Madison	3	B	4	4	8	8	....
35 Capital House	Madison	3	B	5	8	20	20	....
36 Hotel Ogden	Madison	3	B	4	4	11	16	....
37 The Park Hotel	Madison	4	B	7	10	24	28	29
38 Thomas House	Marshfield	3	B	6	6	12	14	....
39 Hotel Drake	Mellen, Ashland Co.	3	W	5	12	35	18	....
40 New Merchants	Merrill	2	B	4	5	20	...	....
41 Minoqua House	Minoqua	2	W	4	5	24	...	....
42 Hotel Schantz	New London	3	B	4	7	15	20	....
43 The Elwood Hotel ..	New London	3	B	4	12	16	20	....
44 Hotel Cascade	Osceola	3	W	6	8	13	9	....
45 Tremont House	Oshkosh	3	B	10	6	31	33	....
46 Fowler House	Oshkosh	2	B	4	4	11	25	....
47 Commercial Hotel ..	Oshkosh	2	W	9	6	25	...	....
48 Hotel Athearn	Oshkosh	4	S	12	11	30	31	32
49 Revere Hotel	Oshkosh	3	B	10	7	34	34	....
50 Corning House	Portage	3	B	5	12	20	28	....
51 Hotel Columbia	Portage	3	B	4	6	17	17	....
52 Planters Hotel	Portage	3	B	5	25	25	...	....
53 Ender House	Portage	3	B	11	7	18	18	....
54 Hoffman House	Port Washington	3	B	2	...	16	16	....
55 Hotel Stolte	Reedsburg, Wis.	3	B	5	9	19	21	....
56 The Fuller House	Rhineland, Wis.	3	B	7	7	19	18	....
57 Commercial House ..	Rib Lake	3	W	7	9	25	25	....
58 Murdock Hotel	Shawano, Wis.	3	B	4	7	19	19	....
59 Hotel Foeste	Sheboygan	3	B	10	22	25	18	....
60 City Hotel	Sheboygan	3	W	7	7	5	5	....
61 Warren House	Sparta	2	W	4	14	20	...	....
62 The Lytle House	Stanley	2	W	5	8	20	...	....
63 Vincent House	St. Croix Falls	3	B	6	5	7	15	....
64 St. Croix House	St. Croix Falls	4	W	3	3	7	14	4
65 St. James Hotel	South Superior	3	W	11	11	25	27	....
66 Irving	Tomahawk	2	W	4	10	28	...	....
67 The Mitchell.....	Tomahawk	3	B	4	10	31	32	....
68 Park Hotel	Viroqua	2	W	6	7	22	...	....
69 Weiskirchen	West Bend, Washington C	3	B	3	4	12	12	....

INSPECTION OF HOTELS—Continued.

Office number.	Means of escape.	Daily No. of guests.	When estab-lished.	Doors swing in or out.	No. of servants.	Location of servants' rooms.	Date of inspection.	Inspector.	Orders issued.
1.....	Doors.....	25	1890	I	5	3d floor.....	Oct. 15, 1897....	Long.....	Fire escapes.
2.....	Inside stairway, six windows.....	10	1887	I	3	1st floor.....	Nov. 19, 1897....	Fisher.....	S. O. Notices posted.
3.....	Balconies, wooden fire escape.....	20	1887	I	4	2d floor.....	Nov. 5, 1897....	Fisher.....	Fire escape. Notices posted.
4.....	Iron fire escape.....	15	1894	O	2	1st floor.....	Dec. 11, 1897....	Williams.....	Notices posted.
5.....	Fire escape, two iron ladders.....	45	.....	I	14	4th floor.....	Oct. 22, 1897....	Fisher.....	Notices posted.
6.....	Stairs and fire escapes.....	30	1883	I	21	2d and 3d floors	Nov. 6, 1897....	Long.....	
7.....	Doors.....	25	1896	I	6	3d floor.....	Aug. 19, 1897....	Fisher.....	Fire escape. Notice posted.
8.....	Fire escapes.....	25	1892	I	15	3d floor.....	Nov. 24, 1897....	Williams.....	Notices posted.
9.....	Iron ladders.....	15	1894	O	4	3d floor.....	Oct. 22, 1897....	Fisher.....	Notices posted.
10.....	2 iron fire escapes.....	25	1879	O	14	N'r hot. in B. bld	Mar. 2, 1897....	Williams.....	Notices posted.
11.....	3 Iron Fire escapes.....	50	1867	O	22	2 & 3 floor.....	Mar. 2, 1897....	Williams.....	
12.....	Doors.....	25	1861	I	6	2d floor.....	Oct. 16, 1897....	Fisher.....	Fire escapes. Notices posted.
13.....	Doors.....	6	1896	O	2	1st floor.....	July 28, 1897....	Fisher.....	
14.....	Iron Fire escape.....	20	.....	I	6	3rd floor.....	Aug. 21, 1897....	Fisher.....	
15.....	2 Iron Fire escapes.....	20	.....	O	4	2d floor.....	Aug. 21, 1897....	Fisher.....	Notices posted.
16.....	1 Iron Ladder.....	18	1896	I	4	3rd floor.....	Aug. 20, 1897....	Fisher.....	Notices posted S. O.
17.....	1 Iron Ladder.....	12	1896	I	4	2d floor.....	Aug. 20, 1897....	Fisher.....	Notices posted S. O.
18.....	Stairways and Doors.....	15	1883	I	11	2d floor.....	Nov. 3, 1897....	Williams.....	
19.....	Stairways, Doors and Windows.....	10	.....	I	3	3d floor.....	Dec. 12, 1897....	Williams.....	S. O.
20.....	2 Fire escapes.....	30	1887	I	17	2 & 3 floor.....	Mar. 26, 1897....	Williams.....	
21.....	1 Iron Fire escape.....	10	1887	I	3	1st floor.....	Mar. 26, 1897....	Williams.....	Notices posted.
22.....	1 Iron Fire escape.....	15	1887	O	7	2 & 3 floor.....	Mar. 26, 1897....	Williams.....	
23.....	2 A 1 Fire escapes.....	15	1867	I	9	2 & 3 floor.....	Mar. 26, 1897....	Williams.....	
24.....	1 Iron Fire escape.....	20	1884	I	3	2d floor.....	Mar. 25, 1897....	Williams.....	
25.....	Stairways in front and back.....	15	1892	O	2	2d floor.....	Mar. 16, 1897....	Williams.....	
26.....	1 Iron Fire escape.....	15	1886	O & I	3	1st floor.....	Mar. 16, 1897....	Williams.....	
27.....	2 A 1 Fire escapes.....	30	1880	O & I	30	2, 3 & 4th floor..	Mar. 25, 1897....	Williams.....	
28.....	Doors and Stairways.....	5	1875	I	2	2d floor.....	Mar. 16, 1897....	Williams.....	
29.....	2 Fire escapes.....	30	1887	O	8	1st floor.....	Mar. 25, 1897....	Williams.....	
30.....	1 Iron Fire escape.....	25	1877	I	6	2d floor.....	Aug. 9, 1897....	Fisher.....	

INSPECTION OF HOTELS—Continued.

Office number.	Means of escape.	Daily No. of guests.	When estab-lished.	Doors swing in or out.	No. of servants.	Location of servants' rooms.	Date of inspection.	Inspector.	Orders issued.
31.....	2 Iron Fire escapes	35	.....	I	12	3rd floor.....	Aug. 9, 1897...	Fisher....	
32.....	3 Iron Fire escapes	1897	.....	O	10	2d floor.....	Mar. 2, 1898...	Williams.	
33.....	Iron Fire escape and stairway.....	25	1892	I	16	4th floor.....	Mar. 1, 1898...	Williams.	S. O.
34.....	Iron Fire escape.....	25	1888	I	2	3rd floor.....	Mar. 2, 1898...	Williams.	S. O. Notices posted.
35.....	2 Iron Fire escapes	38	1888	I	26	room out.....	Mar. 1, 1898...	Williams.	S. O. Notices posted.
36.....	1 Iron Fire escape	30	1880	I	10	1st & 2d floor... ..	Mar. 1, 1898..	Williams.	
37.....	3 Iron Fire escapes	1870	.....	I	45	2d & 3rd floor... ..	Mar. 3, 1898..	Williams.	
38.....	Iron Fire escape	25	1887	I	8	1st floor.....	Feb. 14, 1898..	Williams.	Notices posted.
39.....	Stairways, Roof and Porch	100	1896	I	5	2d & 3rd floor... ..	Nov. 1, 1897..	Williams.	Fire escapes.
40.....	Doors and Windows.....	20	1893	I	5	2d floor.....	Nov. 5, 1897..	Long.....	
41.....	Doors, Stairs and Windows.....	20	1890	I	7	1st & 2d floor... ..	Nov. 3, 1897..	Long.....	
42.....	Doors and Stairways	20	1897	I	4	3rd floor.....	Oct. 25, 1897..	Fisher....	S. O. Fire escape.
43.....	3 Iron Ladders.....	20	.....	O	6	annex.....	Oct. 26, 1897..	Fisher....	Notices posted.
44.....	1 Ladder on outside.....	10	1870	I	3	1st, 2d & 3d floor	Nov. 19, 1897..	Williams.	S. O. Notices posted.
45.....	3 Iron Fire escapes	25	1875	O	.....	2d & 3rd floor... ..	Feb. 25, 1897..	Williams.	
46.....	4 Stairways and Windows	20	1875	I	9	1st floor.....	Feb. 26, 1897..	Williams.	Notices posted.
47.....	3 Stairways and Windows	20	1884	I	7	Annex.....	Feb. 26, 1897..	Williams.	Notices posted.
48.....	3 Iron Fire escapes	50	1891	O	40	4th floor & O.....	Feb. 26, 1897..	Williams.	
49.....	1 Iron and 1 Wooden escape	60	1884	I	18	3rd floor.....	Feb. 25, 1897..	Williams.	Notices posted.
50.....	1 Fire escape	30	1856	I	14	3d floor.....	Nov. 19, 1897..	Williams.	
51.....	Doors and balcony	25	1896	O	9	3d floor.....	.....	Long.....	
52.....	Doors	30	1897	O	8	1-2-3 floors	Dec. 4, 1897..	Long.....	Fire escape. Notices posted.
53.....	Fire escape.....	30	1877	I	15	Annex.....	Dec. 4, 1897..	Long.....	S. O.
54.....	Iron fire escape.....	10	1895	I	3	2d floor.....	Aug. 4, 1897..	Fisher....	S. O.
55.....	Ladders to roof and stairway	30	1897	I	6	3d floor.....	June 14, 1897..	Williams.	Fire escape. Notices posted.
56.....	1 Iron Fire escape	15	1888	I	11	2d and 3d floors	Nov. 11, 1897..	Williams.	Notices posted.
57.....	Stairways and Wooden ladders	5	1893	I	3	2d floor.....	Nov. 30, 1897..	Williams.	S. O.
58.....	1 ladder, 3d floor to ground	18	.....	I	6	3d floor.....	Oct. 29, 1897..	Fisher....	Notices posted.
59.....	Fire escape.....	20	1894	O	20	3d floor.....	Apr. 7, 1897..	Williams.	Notices posted.
60.....	1 wood escape	8	1894	I	3	3d floor.....	Apr. 9, 1897..	Williams.	

61	Doors	8	1880	O	3	2d floor	June 25, 1897	Williams	
62	Stairway, porch and doors		1890	I	4	1st floor	Nov. 24, 1897	Williams	S. O.
63	Iron Fire escape	6	1885	I	6	2d and 3d floors	Nov. 20, 1897	Williams	S. O.
64	Doors, porch and stairways	20	1885	I	1	3d floor	Nov. 20, 1897	Williams	S. O.
65	Stairway, roof and porch	25	1891	O	4	1st and 3d floors	Sept. 28, 1897	Williams	
66	Doors	25	1891	I	8	2d floor	Nov. 4, 1897	Williams	
67	4 Fire escapes	15	1896	O	21	2d floor	Nov. 4, 1897	Long	
68	Doors and windows	15	1870	I	6	2d floor	Nov. 15, 1897	Long	
69	Doors	8	1897	I	2	1st floor	Sept. 15, 1897	Fisher	Fire escape. Notices posted.

INSPECTION OF HALLS.

In visiting 68 halls, the inspectors found occasion to order 15 doors changed to swing out and five fire escapes erected. Of the places inspected 28 were one story high; 21 were two stories high; 14 were three or more stories high, and 5 were not answered on this question. A large percentage of the halls were of brick, there being 57.3 per cent. of the total constructed of that material; 36.8 per cent. were frame and 5.9 per cent. were stone. The total seating capacity of 57 halls is 34,535 or an average of over 600. The doors on 50 swing out as provided by law but on 18 the doors swing in and orders were given to change these.

The same abbreviations have been used here under the column headed "Frame, Brick, Stone" and "Do doors swing in or out" as in Table relating to churches. The order to have doors swing out is also shown as in the Table relating to churches, while fire escapes ordered are indicated by F. E.

INSPECTION OF HALLS.

Name of hall.	Location.	Size of building.	Frame, brick, stone.	MEANS OF ESCAPE.		When erected.	Do doors swing in or out.	Seating capacity.	Date of inspection.	Orders.
				Doors.	Fire escape.					
Assembly Hall	Algoma, Kewaunee Co	1 S	F	2	.....	1879	O	1,400	July, 1897	.....
Episcopal Hall	Algoma, Kewaunee Co	1 S	B	.....	.....	1883	I	100	July, 1897	.....
Appleton Town Hall	Appleton, Outagamie Co	1 S	F	.....	.....	1883	I & O	1,500	September, 1897	.....
Haramania	Appleton, Outagamie Co	.....	F	.....	.....	1889	O	400	September, 1897	.....
Masonic	Appleton, Outagamie Co	.....	B	.....	2	1881	I	350	September, 1897	.....
Opera	Appleton, Outagamie Co	.....	.....	.....	.....	.....	.....	.....	.....	.....
St. Joseph's Catholic	Appleton, Outagamie Co	1 S	B	3	.....	1894	O	.....	.....	.....
Town Hall	Amberg, Marinette Co	.....	F	.....	.....	1895	O	.....	October, 1897	.....
Assembly	Beloit, Rock Co	.....	B	.....	.....	.....	O	500	.....	F. E.
Assembly	Beloit, Rock Co	.....	B	.....	1	1889	O	250	October, 1897	.....
Music	Big Bend, Waukesha Co	2 S	F	2	.....	1896	O	300	September, 1897	.....
Hund's Opera	Boscobel, Grant Co	1 S	F	.....	.....	1881	O	500	July, 1898	2 D.
Assembly	Cedarburg, Ozaukee Co	.....	B	.....	.....	1885	I	150	July, 1897	S. O.
Washington	Cedarburg, Ozaukee Co	.....	B	2	1	.....	I	200	July, 1897	S. O.
Opera House	Delavan, Walworth Co	.....	B	1	.....	.....	O	500	.....	.....
Opera House	Darlington, Walworth Co	.....	B	2	.....	1885	I	800	.....	.....
Assembly	Green Bay, Brown Co	.....	B	.....	1	1896	I	300	August, 1897	F. E. & S. O.
Christ Episcopal	Green Bay, Brown Co	.....	F	.....	.....	1860	I	100	August, 1897	.....
St. Patricks	Green Bay, Brown Co	.....	F	.....	.....	1882	O	300	August, 1897	.....
Turner	Green Bay, Brown Co	.....	B	.....	.....	1875	O	1,800	August, 1897	.....
Y. M. C. A.	Green Bay, Brown Co	2 S	B	2	.....	1891	O	300	August, 1897	.....
Turner	Hartford, Washington Co	.....	F	.....	.....	1875	I	350	August, 1897	S. O.
German	Independence, Trempealeau Co	.....	F	.....	.....	1884	I	200	December, 1897	S. O.
Opera	Independence, Trempealeau Co	.....	B	.....	.....	1889	I	.....	December, 1897	S. O.
Assembly	Kewaunee, Kewaunee Co	.....	B	1	.....	1880	I	150	July, 1897	S. O.
Loyal Opera	Loyal, Clark Co	1 S	F	.....	.....	1894	I	400	June 1897	S. O.
Armory Hall	La Crosse, La Crosse Co	.....	B	.....	.....	1875	O	800	March, 1897	.....
Y. M. C. A.	La Crosse, La Crosse Co	.....	B	.....	.....	1885	O	300	March, 1897	.....
Assembly	La Crosse, La Crosse Co	.....	B	.....	.....	1884	O	1,200	August, 1897	.....
Assembly	Manitowoc, Manitowoc Co	.....	B	3	.....	.....	I & O	500	August, 1897	.....
Assembly	Manitowoc, Manitowoc Co	.....	B	.....	1	1887	I & O	500	August, 1897	.....

INSPECTION OF HALLS—Continued.

Name of hall.	Location.	Size of building.	Frame, brick and stone.	MEANS OF ESCAPE.		When erected.	Do doors swing in our out?	Seating capacity.	Date of inspection.	Orders.
				Doors.	Fire escapes.					
Turner Hall.....	Manitowoc, Manitowoc Co.....	1 S	B	4	.....	1878	O	900	Sept., 1897.....	
Bohemian Hall.....	Milwaukee, Milwaukee Co.....	3 S	S	5	.....	1895	O	600	Jan., 1897.....	
Gymnasium Hall.....	Milwaukee, Milwaukee Co.....	1 S	F	2	.....	1895	O	.....	Jan., 1897.....	
Pabst Theatre.....	Milwaukee, Milwaukee Co.....	3 S	S	4	.....	1895	O	1,900	Jan., 1897.....	F. E.
Recreation Hall.....	Milwaukee, Milwaukee Co.....	1 S	F	4	.....	1885	O	1,000	Jan., 1897.....	
Opera Hall.....	Monroe, Green Co.....	1 S	B	2	.....	1861	I	400	Dec., 1897.....	S. O.
Turner Hall.....	Monroe, Green Co.....	1 S	B	2	.....	1875	O	500	Dec., 1897.....	
Opera.....	Merrill, Lincoln Co.....	.....	O	.....	.....	1886	O	.....	Nov., 1897.....	
Opera.....	Menasha, Winnebago Co.....	2 S	F	2	.....	.....	I	400	Sept., 1897.....	S. O.
Temple Hall.....	Mosinee.....	.....	F	1	.....	1885	I	.....	Oct., 1897.....	S. O.
Opera.....	Marshfield, Wood Co.....	1 S	B	2	.....	1887	I & O	1,000	Feb., 1898.....	
Grand Opera.....	New London, Waupaca Co.....	1 S	B	2	.....	1893	O	800	Oct., 1897.....	
New Loudon Opera.....	New London, Waupaca Co.....	2 S	B	2	.....	.....	O	800	Oct., 1897.....	
Episcopal Hall.....	Oconto, Oconto Co.....	1 S	F	2	.....	1871	I	175	Oct., 1897.....	
Oconto Opera.....	Oconto, Oconto Co.....	2 S	B	2	.....	1892	O	600	Oct., 1897.....	
Turner Opera.....	Oconto, Oconto Co.....	2 S	B	2	.....	1889	O	1,000	Oct., 1897.....	
Grand Opera.....	Oshkosh, Winnebago Co.....	.....	F	2	.....	1882	.....	1,050	Feb., 1897.....	
Culver's Hall.....	Oakfield, Fond du Lac Co.....	2 S	F	.....	.....	1890	I	450	July, 1897.....	S. O.
Opera Hall.....	Port Washington, Ozaukee Co.....	1 S	F & B	5	.....	1886	I & O	800	Aug., 1897.....	
St. Mary's Catholic Hall.....	Port Washington, Ozaukee Co.....	1 S	B	2	.....	1860	O	1,000	Aug., 1897.....	
Lyceum Hall.....	Plymouth, Calumet Co.....	1 S	F & S	3	.....	1871	O	500	Aug., 1897.....	
Turner Hall.....	Plymouth, Calumet Co.....	1 S	F	6	.....	1870	O	400	Aug., 1897.....	
Y. M. C. A.....	Plymouth, Calumet Co.....	3 S	F	.....	.....	1894	I	200	Aug., 1897.....	S. O. & F. E.
Ripon Guards' Hall.....	Ripon, Fond du Lac.....	1 S	F	.....	.....	1897	O	3,000	Nov., 1897.....	
Stones Opera.....	Ripon, Fond du Lac Co.....	.....	B	.....	.....	1882	O	550	November, 1897.....	
Opera.....	Richland Center, Richland Co.....	2 S	B	2	.....	1892	O	300	July, 1898.....	
Opera.....	Rib Lake, Taylor Co.....	4 S	F	6	.....	1888	O	500	June, 1898.....	F. E.
Opera.....	Sturgeon Bay, Door Co.....	2 S	F	1	.....	1891	O	500	November, 1897.....	
Library Hall.....	Tomahawk, Lincoln Co.....	1 S	F	.....	.....	1893	O	.....	November, 1897.....	

Turner Hall.....	Two Rivers, Manitowoc Co.....	1 S	F	4	.....	1887	O	500	November, 1897.....	
Rogers & Williams Hall.....	Viroqua, Vernon Co.....	3 S	B	1	.....		O		November, 1897.....	
Opera	Waterloo, Jefferson Co.....	1 S	F	2	.....	1889	O	500	November, 1897.....	
M. E. Hall	Waukesha, Waukesha Co.....	1 S	S	3	.....	1862	O	150	June, 1897.....	
Silurian Casino.....	Waukesha, Waukesha Co.....	1 S	F	2	.....	1891	O	1,250	June, 1897.....	
Masonic Hall	Watertown, Jefferson Co.....	3 S	B	.....	2		I	500	August, 1897.....	S. O.
Opera	Watertown, Jefferson Co.....	2 S	B	5	2	1887	O	500	August, 1897.....	
Turner Hall	Watertown, Jefferson Co.....	2 S	B	5	.....	1861	O	800	August, 1897.....	
Alexander Hall.....	Wausau, Marathon Co.....	1 S	B	2	.....	1892	O		November, 1897.....	
Columbia Hall	Wausau, Marathon Co.....	.....	B	3	.....	1892	O		November, 1897.....	

SPECIAL INSPECTIONS.

CHILD LABOR.

As already explained the work of inspection was classified as "General" and "Special" inspections. The general inspection embraced practically all the provisions in the laws and was extended as nearly as possible to every factory in the state. The reports of this work showing the condition of the different plants with reference to the factory acts has been presented in the preceding pages of this part. The special inspections related mostly to violations of the child labor law and to the investigation of various complaints that from time to time are made to this bureau. These inspections were mostly limited to places where children are employed, and the greater proportion of the data concerning children 16 years of age or under who were employed in the different places, which was gathered by the inspectors while engaged in this work is presented in the following pages.

The law regulating the labor of children in this state provides that no child under fourteen years of age shall be employed in any factory or workshop unless upon a special permit to this effect granted by the county judge. It is also provided that it shall be the duty of the factory inspectors or other officers of this bureau to enforce this act. The relation of the inspectors to this law is therefore plain. To completely enforce the same, however, has been found very difficult. The reasons for this may primarily be found in the facts that it is so frequently violated and that these violations are, as a rule, very hard to establish.

The reasons why this law is frequently violated are not far to seek. Compare, for instance, the employment of a child under the legal age and the omission to furnish fire-escapes as provided for in the law. In both cases the factory laws are violated. In the first case, however, the dismissal of the child, owing to the

frequent fluctuations of employment, and in the number employed as well as to other circumstances, is no bar to the early repeating of this offense. In the second case, when the law is once complied with, or the necessary escape furnished, a new one may not be needed for a very long time to come. Here, therefore, the chances are that another occasion for violating the law may not appear while the building lasts. It is true that in the second case the improvements required may be connected with some expense and that therefore a stronger pressure may be needed to bring it about, while the dismissal of a child involves no expense whatever and is therefore so much more readily complied with, but this does not effect the rule. The chances for illegal employment of children are many times as numerous as the chances for other violations. Hence it is natural that such violations should also outnumber all others.

Violations of the above provisions are also much more difficult to establish than violations of any of the other provisions in the acts. The reasons for this are easily guessed at. The inspectors cannot tell the exact age of a child from its appearance alone. By a common understanding the children themselves, their parents, and not seldom, the employers usually endeavor to deceive the inspectors on this point. Besides this there is in this state a notable lack of reliable or complete birth records. Roundabout and laborious methods are therefore necessary in order to obtain data relating to the ages of children that is so complete as to furnish a safe basis for further proceedings.

As to the looks or general appearance of a child, it is at best an unsafe guide as to its age. Some look older than they really are, others younger. Nothing short of a medical examination is therefore in most cases sufficient to determine from their physical development alone whether a child is really fourteen years or a trifle under this age. Under such circumstances it is not to be expected that the inspectors should be able to form safe opinions from their direct observations alone. It is in this and similar respects that the enforcement of these provisions differ mostly from other acts.

As said, practically all concerned try in one way or another to mislead the inspectors. Few children give the inspectors their

correct age unless perhaps under pressure. While the first step to obtain data as to their age consists of a personal examination of the child, this seldom brings the desired result. They are ready enough to answer all questions, but experience soon teaches that the facts given concerning their age cannot be depended upon. As a rule the children do not only studiously misrepresent their age, if younger than the limit fixed by law, but besides this, they also, as a rule, are provided with certificates signed by their parents or others concerned showing that they are fourteen years of age or past regardless of the facts in the case. Cases have even been met with where parents, anxious to either obtain employment for their little ones or to keep them at work, have changed the records of their age in the family bible and other places. Numerous other devices for the purpose of deceiving the inspectors are constantly resorted to. In many cases they produce facts in favor of their position that, on the face of it, are practically indisputable. Added to this is the peculiar and often arbitrary position of the employers themselves. While it seldom appeared that the employers directly encouraged means of this kind, few of them exercised necessary care in this respect. Even children whose appearance alone almost conclusively show that they are under the legal age, are hired without being required to furnish absolute proof as to their age. In many cases they are also both directly and indirectly discouraging the inspectors in their work. The obstacles of all kinds which the inspectors must overcome in order to perform their duties are often both unpleasant and very difficult.

Thus, direct efforts, only, will usually fail to elicit from children and others concerned, the information desired. Further investigation is therefore necessary. To visit their homes and neighbors is usually a waste of time. With full particulars as to the names of the children in question, and of their parents, also of their place of birth and name of school attended, the official record of births and such school records as may be accessible may be examined. The birth records in the different counties however, are so incomplete as to be of comparatively little value. But even if complete they would only afford real assistance in cases where the children were born in the county where found.

at work. When born elsewhere any search of such records is ordinarily out of the question. Public school records are sometimes accessible and may be correct, but will apply only to such children as have attended the school. As the tables show a large proportion of the children attended parochial schools only, and while the records kept in these schools are usually reliable they are not accessible in every case. While records of the kind mentioned have been of the greatest assistance to us in running down cases of child labor, they cannot always be depended upon or referred to. Thus, it often happens that after exhausting all such means, the inspectors are thrown back upon their own resources. In such cases there is only one course open and that is, to endeavor, by close questioning, to make the children tell the truth. While thus in one way or another all doubts are finally removed, so much time is usually required for this, that it is only just to say, that the present resources of this Bureau are not even sufficient to completely enforce the provisions relating to child labor alone.

What has thus been said shows the nature of the obstacles which the inspectors have had to overcome in enforcing the child labor law, or in other words, why special inspections and work were found necessary to this end. At the same time it also conveys the impression that parents and employers or those who have the say in this matter would not thus go out of their way in securing employment for children under fourteen or to keep them employed unless financially or otherwise interested in them or in the result of their labor. In prosecuting the inspections we have also made inquiries upon these points and a brief discussion of what we have found and the conclusions it leads to may therefore be in order.

Poverty is usually the main cause to which both the children and their parents attribute their efforts to evade the law. Asked concerning it the children usually stated that the family was so poor that their earnings were necessary to its support and that therefore their parents wanted them to go to work. The truth of this statement was not always borne out by the facts. Subsequent investigations often revealed an entirely different condition in their homes. While it was undoubtedly true that the

children had sought employment in obedience to their parents' wishes, their earnings were by no means always necessary to their support. As a whole, however, the statement discloses quite plainly the relation of the parents to the employment of their children. The latter are put to work by the former because of the wages they earn. These earnings increase the income of the family by their amount. It is true that this increase is not great. Conditions, however, are not far to seek where, in the minds of the parents, it is considered of greater importance than their obligations to their children as well as to society.

In many cases the earnings of the children were also badly needed by themselves or the family. Investigations showed that in nearly one-half of the cases the father was either permanently or temporarily unable to provide for the family. In some cases this was due to sickness. In others to deaths. In still others to inability to find work and other causes beyond their control. That under such or similar circumstances healthy and strong children when upwards of twelve years of age should be permitted to work a part of each year is perhaps only just. It is at least a fact that such employment wisely directed would prevent or ameliorate much suffering and this without any perceptible injury to the children. In our manufacturing centers there are few families, especially when large, and when the father depends on common labor only for its support, where such assistance as even a child can give has not at one juncture or another been badly needed.

There is also a provision in the law which is intended to cover such cases. The various county judges are namely authorized, when in their opinion the best interest of the family or children demands it, to grant limited permit to work to children who are twelve years of age. If judiciously applied this provision would seem to be a wise one, especially when the other provisions in the act are strictly enforced. It would undoubtedly have covered many of the above cases. If taken advantage of in such cases it would have enabled those affected to enjoy legally and without risks what they tried so hard to enjoy in violation of other provisions. For some reason, however, the majority of those who are entitled to it fail to avail themselves of this privilege. Cases:

have been met with where the family have undergone many privations rather than to apply for such a permit. On the other hand there are also cases where this privilege has been abused.

Cases were also met with where the employment of children could be traced to bad habits, shiftlessness or lack of thrift on the part of father or parents. In such cases, while the families often suffer from privations of all kinds, radical remedies are needed. The conditions brought about by such causes are usually both lasting and growing. Relief, in order to be of any value, therefore, must be permanent. The temporary employment of children could thus not help matters any, while it possibly might encourage such evils; and to allow children under fourteen to remain at work permanently society cannot afford.

In a large proportion of the cases, however, there appeared no good reason why the children should not have been found at school instead of in the work-shop. Investigations often revealed, that the father was not only working but enjoyed permanent employment. In some cases older children living with the family were also at work, and the family often owned the house in which they lived. The condition generally in their homes gave no traces of want. When under such conditions young children are forced to seek employment it is quite evident that their parents attach greater importance to their small earnings than to their future welfare. For such a course no justification whatever can be found. Thrift is commendable in itself. But when practiced at the expense of both the physical and mental development of the growing generation it is carried much too far. As a rule, parents of this kind will also make greater efforts to find employment for their little ones and resort to more desperate means in order to keep them at work, than those who are in actual need of their help.

The relation of the employers to the employment of children differ in many respects from that of the parents. In almost every case the labor of their children is of some material benefit to the parents. To the employers this is not the case. It is often held that because the wages of the children are low, child labor is cheap labor, and that the employment of such labor results in a low cost of production. This statement needs qualifica-

tion. Low wages do not, as a rule, mean low cost of production. Skill and efficiency on the part of the worker is often found to more than offset any difference that may exist in the wages paid. In determining whether labor is dear or cheap, efficiency as well as the amount paid in wages, should therefore be taken into account. But even if the question of efficiency is left out and it is admitted that child labor, as a whole, means low cost, the employment of children under fourteen years of age would not, under existing conditions, have this effect. Investigations upon this point show, that children under fourteen were as a rule paid as much for their labor as those who were fourteen and past; and also, that the number of children past the legal limit who sought employment at this wage was fully equal to the demand for such labor. As a rule, the efficiency of a child increases with its age. How under such circumstances any manufacturer can find it profitable to employ children under fourteen years of age is rather hard to explain.

Besides these there are other reasons why employers should find it to their interest to live up to the law regarding child labor. Violations of this law make them liable to prosecutions and fines. In this employers have certainly more at stake than parents, and the risks they are running are therefore much greater. The younger the child, the more deficient it also is in point of judgment and discretion, and, for this reason, requires more attention and watchfulness not only in its work but around delicate and dangerous machinery. When it becomes known to the inspectors that a manufacturer is in the habit of disregarding this law, their visits get more frequent and their inspection much closer. This often results in more or less loss of time and attention on the part of the employees and this is often an item that is worth considering. Many other reasons might be added but enough have been given to show the direction in which their interests lie.

It is thus plain that the interest of employers lies in complying with the law. Regardless of this a great many are very negligent in this respect. When help is needed around their plant the first comer is often hired, without being required to furnish any other proof as to age than their own and parents' certificate.

Children which happen to be relatives of some of their older employees are even shown greater leniency. When thus once in the employ it is usually kept even after found to be under the age. Rather than be caught at this offence many employers when confronted take the side of the child as against the inspectors, thus making it much more difficult to obtain the necessary evidence. During the past year, however, employers have been much more careful in this respect; but this is rather due to the steadily increasing efficiency of the inspectors than to any greater desire on their part to live up to the law. On the other hand employers are sometimes imposed upon. In some cases both parents and children furnish so strong proof, of being of age, that there could hardly be any reason to doubt its trustworthiness but which when run down by the inspectors is found to be made up for the purpose. On the whole, however, the employers are fully able to protect themselves. Through their failure to do so they are, at least, partly responsible for practically every case of child labor.

The facts thus given, while simply such as have come to our notice during the work of inspection, throw much light upon the conditions surrounding the enforcement of the law in question, as well as the relation of parents and employers to the employment of children under fourteen years of age. Concerning the enforcement of this law we have seen that because of misrepresentations on the part of those effected, and of defective birth records, the age of the children is often difficult to ascertain and that therefore special attention and time was required to fully enforce it. As to the relation of parents to the employment of their children we have seen that this relation is very intimate. In many cases the parents were actually dependent upon the addition to their income from this source, and this fact largely accounted for their determined efforts to keep their children children at work. In the case of the employers, it was seen that while they were more or less to blame for violations of the child labor law they could have nothing to gain therefrom from a financial point of view.

As the various means employed for the purpose of misleading the inspectors, as to the age of children, sometimes proved effective, or, at least, left some cases in doubt, more thorough

work in this respect was considered necessary. Accordingly at one of our special visits to the firms where children are mostly employed a complete census of every child sixteen years of age and under was taken. This work involved a large amount of labor and much time, but was productive of good results. It furnished particulars not only of the children themselves but of their surroundings and these in turn enabled us to run down practically all doubtful cases. As a whole, the facts thus gathered also disclose what is needed in the way of legislation in this regard and furnish some valuable material for statistical purposes. The fact is also brought out that, while taken together the number under fourteen who were found at work without permit foot up to quite a figure, it is not as large as expected or currently reported.

This census or investigation was made as broad as time and our facilities for carrying it on allowed. Of the children, it embraces their name and address; the kind of work done; age; date of inspection; where born; hours of labor; wages paid; time employed; with whom living; and school attendance. Of their employers and parents it gives the names and business or occupation. As each child was required to personally certify to the facts thus obtained from it, it also shows the number of children that were able to write their own names. In addition to this, and for comparative purposes, the total number of wage-earners employed by the establishments in question was also obtained. Further illustration of the scope of this investigation may be had from the schedule itself, which is here included for this purpose.

SCHEDULE.

Name of firm where employed.....

 Kind of goods made
 Location
 Full name of child.....
 Address
 Kind of work performed
 Age When born

Where born

Hours of work daily.....

Wages received per week.....

How long in present employ.....

Name and place of business of next previous employer
.....

Living with parents.....

Occupation of father

Name of father

Attended school..... How long.....

What school

Remarks:.....

.....

.....

.....

I hereby certify that the above answers are correct.

.....

As stated already the above schedule was used in this investigation; or, in other words, the questions shown therein were put to each one of the children included and their answers noted. Thus, in inspecting the different establishments in this case, all children sixteen years of age or under employed therein were examined upon these points and all the facts relating thereto obtained. In most cases most of the questions were willingly answered; but now and then a child was met with whose memory seemed rather short, especially was this the case when under the legal age. As the examinations were made by the inspectors directly they were, of course, in position to use their own judgment in such cases. Whenever, therefore, the answers were uncertain or qualified or when there were other reasons to believe that they did not correspond to facts, indirect or outside means were employed to get at the truth. Complete answers were thus obtained in every case and this data furnish the basis for following tabulations.

It should perhaps be noticed that all the facts inquired about in the schedule have not been included in the tabulated reports. Among the facts thus omitted are: Names and addresses; the kind of work done by the children in question, and particulars

as to when the child was born. The reasons for not showing names and address are obvious. It is the rule in this Bureau not to publish names, etc., of persons or firms who either furnish data or concerning whom data or facts are gathered unless there is some good reason for doing so. For lack of space the returns for each individual child could not be given. This alone would make the omission of the names of both children and parents practically necessary. The work done by the children employed in the various industries differ so much that no convenient classification could be found under which to include it all, and hence all facts relating to this were left out entirely. Particulars as to the time of birth, such as the date, month, and year, were considered of little importance since the age, expressed in years and fraction of same, are shown in each case. While a few of the facts collected have thus been omitted what has been said show that these omissions do not affect the value of the figures given.

On the other hand some facts have been presented in the tables which were not called for in the schedules. Among these are, those which show the number of children who stated that their father was working and the number who reported upon as to whether their parents owned their home or paid rent for same. As said these facts were not required by the schedule. They bear a close relation, however, to the economic condition in the homes and it was because of their importance in this respect that they were collected. The inspectors often met with cases in which the information wanted had to be gotten in a roundabout way. In such cases the inquires naturally would cover more ground than when each one of the questions were answered promptly. Such additional points as were thus brought out were generally noted down on the schedule to which they appeared. In many cases such inquiries were also prompted by their desire to more fully understand the condition; and the replies were then noted under remarks. All such facts relating to the points mentioned above were collected and tabulated. As the tables show, these facts cover only a certain number of cases. This fact, however, does not greatly depreciate their value because in each instance the number of the inquiries made as well as the answers received are known.

As said above each individual schedule or return could not be presented in detail in the descriptive tables. By thus excluding details much that is important in determining the condition both of the individual and the class has undoubtedly been lost. All who are familiar with statistics of this kind know the importance of many minor facts that cannot be expressed or carried along en masse with the main points. Nevertheless, space would not admit of individual presentation. Since this was out of the question the next best thing had to be resorted to. This was found to be a presentation by establishments. Thus the returns for each of the establishments inspected were compiled and the totals and averages in each case used as the figures for the establishments in question. The different establishments were then classified as to industries. As tables I stands, therefore, it shows for each of the establishments included, the totals and averages of all the facts collected regarding all children sixteen years of age or under, employed therein. Table II shows the aggregates and averages for each industry.

The data thus shown in tables I, II may be described under the following heads:

Total number of employes: By this is meant the total number of wage-earners only—salaried persons were not included—at the date of inspection. This data was furnished by every establishment inspected. It was collected mainly for comparative purposes.

Wage earners 16 years of age or under: Under this head in table I are grouped seven columns of figures relating to the number of children 16 years of age or under employed in each one of the establishments included at the time of inspection. The first column in order shows the total number. The next two show the number of males and females. In the fourth place, their average age is given; and in the fifth and sixth the respective number over and under the average age. The last column gives the number under fourteen years of age, or, of those who, unless special permits to that effect had been obtained, were employed against the law.

Hours of labor: By this is meant the hours of labor which constituted a day's work at the time of inspection. Information

upon this point was obtained in all cases, and the table shows the length of the working day for each establishment.

Wages: The data in this group relate to the wages paid the children employed in the different plants and industries represented. The tables show in each case, the average, highest and lowest wages paid; also the number of children receiving the average wage or over and the number receiving less than the average. This data is very interesting. It may therefore seem, especially to those who may wish to go into details, that the wages of each individual child ought to have been shown. While detailed presentations would undoubtedly have proved valuable in this as well as in other parts of this table, such presentations were for reasons already explained out of the question. An examination of the figures as given, however, will reveal the fact that they will meet most of the demands that can be made upon them. They have also been collected and compiled with special care and are as far as they go absolutely reliable.

Time in present employ: The figures under this head represent, of the children included in the different establishments, the average number of weeks they had remained in their present employ; the longest and shortest period of employment; the number who served the average time or more and the number who had served less than the average length of working period.

Number having had previous employment: By this is meant the number of children who, previously to their present employment, had worked for some other employer. The figures under the above head therefore show the number of children in each establishment who stated that they had been employed elsewhere before their present place was obtained.

School attendance: Statistics relating to the school attendance are of the greatest importance in all studies of the child labor question. Considerable space has therefore been given to the data collected which related thereto. Two classes of schools, the "Public" and the "Parochial," had been patronized. In most cases it was found that the children had exclusively attended one or the other of these schools. The particulars for each have therefore been presented separately. As the table now stands it shows separately, for the establishments included, the number

who attended each of these two classes of schools; the average, longest and shortest periods of school years in attendance, and the number whose schooling exceeded or fell short of the average period. It also shows the number of children and the average attendance in each case of those who patronized both schools, and the number of those who had not attended any school.

Where born: The children included were also classified as to their place of birth. As it was found that they were born either in Wisconsin, other states, or Germany, this classification was adopted.

With whom living: This information relates to the home life of the children investigated. Three columns appear under this head. The first of these shows the number in each establishment who lived with one or both parents. The other two show respectively the number who lived with other relatives than parents or were boarding.

Occupation of father: Full data regarding the occupation or business of the father is of importance in all efforts to study the condition in life of the child. Such data was also gathered. As the facts showed that in practically every case the father was either working at common labor or a trade, only two classifications were necessary. The table includes the number in each case.

SPECIAL INSPECTION—TABLE I.

Running number.	Total wage earners.	WAGE EARNERS 16 OR UNDER.							Average hours of labor daily.
		Total 16 years or under.	Male.	Female.	Years.		Under average age.	Under 14 years of age.	
					Average age.	Average age or above.			

AGRICULTURAL IMPLEMENTS.

1.....	500	13	13	.....	15.3	7	6	.....	10
2.....	15	2	2	.....	14.5	1	1	.....	10
3.....	650	3	3	.....	15.1	2	1	.....	10
4.....	31	2	2	.....	14.5	1	1	.....	10
5.....	17	2	3	.....	14.3	2	1	.....	10
Total and average.....	1,213	23	23	.....	14.7	13	10	.....	10

BICYCLES.

6.....	120	7	7	.....	14.2	3	4	4	10
7.....	50	11	11	.....	14.7	5	6	1	10
8.....	175	6	6	.....	14.6	5	1	.....	10
9.....	23	3	3	.....	14.6	1	2	.....	10
10.....	22	7	7	.....	14.4	4	3	1	10
11.....	131	8	8	.....	14.9	3	5	.....	10
12.....	300	7	7	.....	14.7	4	3	.....	10
Total and average.....	821	49	49	.....	14.5	25	24	6	10

BOOTS AND SHOES.

13.....	350	29	15	14	15.7	19	10	1	10
14.....	93	8	4	4	15.1	4	4	.....	8
15.....	150	8	7	1	15.1	3	5	.....	8
16.....	35	2	.....	2	15.4	1	1	.....	9
17.....	75	5	5	.....	13.9	2	3	3	10
18.....	35	8	4	4	15.	4	4	.....	10
19.....	360	37	23	14	14.8	24	13	3	10
Total and average.....	1,098	97	58	39	14.9	57	40	7	9.6

SPECIAL INSPECTION—TABLE I.—Continued.

Running number.	WAGES.					TIME IN PRESENT EMPLOY.					No. having had previous employers.
	Weekly.			Average or above.	Less than average.	Wks. Average.	Mos. Highest.	Days Lowest.	Average or above.	Under average.	
	Average wages.	Highest wages.	Lowest.								

AGRICULTURAL IMPLEMENTS.

1.....	3.60	5.00	2.60	6	7	31.	36	1	3	10	4
2.....	3.50	4.00	3.00	1	1	32.	14	21	1	1	1
3.....	3.66	4.00	3.00	1	2	5.	1½	21	2	1	3
4.....	3.30	3.60	3.00	1	1	8.	4	21	1	1	1
5.....	3.50	4.50	3.00	1	2	35.6	18	21	1	2	2
Total and average	3.50	4.22	2.92	10	13	22.5	14.7	17	8	15	10

BICYCLES.

6.....	3.00	3.50	2.50	4	3	21.2	12	2	3	4	.....
7.....	2.77	3.00	2.50	6	5	11.3	12	2	3	8	6
8.....	3.33	4.00	3.00	3	3	18.	18	6	2	4	1
9.....	2.17	2.50	2.00	1	2	7.3	3	20	1	2	1
10.....	2.57	3.00	2.40	2	5	10.	11	6	2	5	6
11.....	4.12	5.00	3.50	3	5	12.3	12	12	3	5	5
12.....	4.57	7.00	4.00	3	4	17.3	12	30	2	5	6
Total and average	3.22	4.00	2.84	22	27	13.9	11.4	11.1	16	33	25

BOOTS AND SHOES.

13.....	2.78	4.00	1.75	15	14	74.7	36	3	6	23	3
14.....	2.31	2.50	2.00	5	3	26.7	12	18	3	5	2
15.....	2.81	4.25	2.00	3	5	35.	24	42	4	4	2
16.....	1.87	2.00	1.75	1	1	51.	14	235	1	1	1
17.....	1.58	2.00	1.58	1	4	14.2	5	31	3	2	1
18.....	2.00	3.00	1.25	5	3	35.5	24	18	3	5	5
19.....	2.52	3.25	2.00	5	32	27.3	28	6	11	26	18
Total and average	2.26	3.00	1.76	35	62	37.7	24.2	52.8	31	66	32

SPECIAL INSPECTION—TABLE I.—Continued.

Running number.	PUBLIC SCHOOLS.					PAROCHIAL SCHOOLS.					BOTH SCHOOLS.		
	Number attending.	Years.			Average or above.	Below average.	Number attending.	Years.			Number attending.	Years.	
		Average.	Highest.	Lowest.				Average or above.	Below average.	Average.		Highest.	Lowest.	Average or above.	Below average.	Av. in public.	Av. in parochial.

AGRICULTURAL IMPLEMENTS.

1.....	6	7.3	9	5	3	3	7	6.5	8	4	5	2	.....	.....	.....
2.....	1	7	7	7	1	.....	.....	.....	.....	.....	.....	.....	1	4	3
3.....	1	7	7	7	1	.....	1	7	7	7	1	.....	1	4	2
4.....	.....	.....	.....	.....	.....	.....	2	5.5	6	5	1	1	.....	.....	.....
5.....	3	3.3	8	1	1	2	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total and average	11	6.1	7.7	5.	6	5	10	6.3	7.	5.3	7	3	2	4.	2.5

BICYCLES.

6.....	4	5.7	7	4	2	2	2	6.6	6	6	2	.....	1	4	3
7.....	4	6.7	8	5	3	1	6	6.8	8	6	4	2	1	3	3
8.....	5	7	8	5	3	2	1	4	4	4	1	.....	.....	.....	.....
9.....	2	6.5	7	6	1	1	1	5	5	5	1	.....	.....	.....	.....
10.....	6	7.3	8	7	1	5	1	8	8	8	1	.....	.....	.....	.....
11.....	2	7.5	8	7	1	1	3	7	8	6	1	2	3	2.7	5.3
12.....	4	7.2	8	7	1	3	.....	.....	.....	.....	.....	.....	3	2	5
Total and average	27	5.8	7.7	5.8	12	15	14	6.2	6.5	5.8	10	4	8	2.9	4.7

BOOTS AND SHOES.

13.....	15	7.1	10.	6	3	12	14	6.2	9	4	9	5	.....	.....	.....
14.....	7	5.9	7	4	6	1	1	6	6	6	1	.....	.....	.....	.....
15.....	4	6.7	8	6	2	2	4	6.2	8	5	2	2	.....	.....	.....
16.....	.....	.....	.....	.....	.....	.....	2	6.	7	5	1	1	.....	.....	.....
17.....	3	6.6	9	5	1	2	2	7.5	8	7	1	1	.....	.....	.....
18.....	2	4.2	7	2	1	1	4	5.2	7	3	2	2	2	4	3.5
19.....	10	7.1	9	5	5	5	21	6.9	8	5	16	5	6	3.5	5.3
Total and average	41	6.2	8.3	4.6	18	23	48	6.2	7.5	5	32	16	8	3.7	4.4

SPECIAL INSPECTION—TABLE I.—Continued.

Running number.	WHERE BORN.			WITH WHOM LIVING.			OCCUPAT'N OF FATHER.		No. who said father was working.	No. who said parents own home.	RENT.	
	Wisconsin.	Other states.	Germany.	With one or both parents	Other relatives.	Boarding.	Labor.	Trade.			No. paying.	Average rent

AGRICULTURAL IMPLEMENTS.

1.....	12	.....	1	13	.....	.....	9	4	.....	10	2	5.75
2.....	2	.....	.....	2	.....	.....	2	.....	.....	2	.....	.....
3.....	3	.....	.....	3	.....	.....	2	1	.....	.....	.....	.....
4.....	2	.....	.....	2	.....	.....	.....	2	.....	.....	.....	.....
5.....	3	.....	.....	3	.....	.....	.....	3	.....	.....	.....	.....
Total and average	22	.....	1	23	.....	.....	13	10	.....	12	2	5.75

BICYCLES.

6.....	4	.....	3	7	.....	.....	7	.....	.....	2	3	6.33
7.....	10	.....	1	10	1	.....	9	2	4	5	.....	.....
8.....	5	.....	1	5	1	.....	5	1	3	3	.....	.....
9.....	2	.....	1	2	1	.....	3	.....	.....	1	.....	.....
10.....	5	.....	2	7	.....	.....	3	4	.....	.....	.....	.....
11.....	3	2	3	8	.....	.....	3	5	.....	.....	.....	.....
12.....	2	3	2	7	.....	.....	3	4	.....	1	.....	.....
Total and average	31	5	13	46	3	.....	33	16	7	12	3	6.33

BOOTS AND SHOES.

13.....	25	3	1	28	1	.....	20	9	15	13	12	8.58
14.....	7	1	.....	8	.....	.....	8	.....	.....	3	2	5.00
15.....	6	2	.....	8	.....	.....	7	1	7	5	.....	.....
16.....	2	.....	.....	2	.....	.....	2	.....	.....	2	.....	.....
17.....	5	.....	.....	5	.....	.....	4	1	4	4	.....	.....
18.....	5	.....	3	8	.....	.....	8	.....	.....	.....	.....	.....
19.....	24	4	9	37	.....	.....	12	25	1	.....	.....	.....
Total and average	74	10	13	96	1	.....	61	36	27	27	14	6.79

SPECIAL INSPECTION—TABLE I.—Continued.

Running number.	WAGE EARNERS 16 OR UNDER.								Average hours of labor daily.
	Total wage earners.	Total 16 years or under.	Male.	Female.	Years.		Under average age.	Under 14 years of age.	
					Average age.	Average age or above.			
BOXES (WOODEN AND PAPER).									
20.....	140	7	7	.....	15.6	5	2	.....	10
21.....	102	24	6	18	15.	11	13	1	10.
22.....	110	3	1	2	14.8	1	2	.....	10
23.....	180	58	9	49	14.9	31	27	.....	10
24.....	39	4	4	.....	15.3	2	2	.....	10.
25.....	130	16	16	.....	14.9	11	5	.....	10
26.....	53	3	2	1	14.8	2	1	.....	10
27.....	8	2	2	.....	16.7	2	.....	.....	10
28.....	110	18	18	.....	15.	11	7	.....	10.
29.....	42	4	4	.....	15.1	1	3	.....	10
30.....	.....	21	20	1	15.	11	10	.....	10
31.....	1.00	11	11	.....	13.10	5	6	6	10
Total and average.....	1,014	171	100	71	15.1	93	78	7	10
BRICK.									
32.....	80	3	3	.....	14.6	2	1	.....	10
33.....	55	3	3	.....	15.6	2	1	.....	10
34.....	52	9	9	.....	14.2	5	4	.....	10
35.....	45	2	2	.....	15.1	1	1	.....	10
Total and average.....	232	17	17	.....	14.9	10	7	4	10
BROOMS, BRUSHES AND BASKETS.									
36.....	15	2	2	.....	13.8	1	1	1	8
37.....	19	7	7	.....	15.	4	3	.....	10
38.....	17	2	2	.....	13.8	1	1	1	10
39.....	46	7	7	.....	14.8	5	2	1	9
Total and average.....	97	18	18	.....	14.3	11	7	3	9.2
CHAIRS.									
40.....	125	8	8	.....	15.	3	5	.....	9.6
41.....	200	37	37	.....	14.6	21	16	8	10
42.....	212	22	15	7	14.6	13	9	5	10
43.....	96	15	15	.....	14.7	10	5	1	10
44.....	439	22	9	13	15.	13	9	.....	10
45.....	450	25	16	9	14.9	11	14	.....	10
46.....	50	2	2	.....	16.2	1	1	.....	10
47.....	450	32	21	11	14.8	22	10	1	10
48.....	320	20	9	11	14.9	12	8	1	10
49.....	67	2	2	.....	15.5	1	1	.....	10
50.....	560	17	12	5	15.1	10	7	.....	10
Total and average.....	2,969	202	146	56	15.2	117	85	16	9.9

SPECIAL INSPECTION—TABLE I.—Continued.

Running number.	WAGES.					TIME IN PRESENT EMPLOY.					No. having had previous employers.
	Weekly.			Average or above.	Less than average.	Wks.	Mos.	Days	Average or above.	Under average.	
	Average wages.	Highest wages.	Lowest.			Average.	Highest.	Lowest.			
BOXES (WOODEN AND PAPER).											
20.....	3.07	3.50	3.00	1	6	19.9	8	60	2	5	4
21.....	2.26	3.90	1.92	1	15	23.3	24	1	8	16	11
22.....	1.66	1.75	1.50	2	1	2.6	1½	1	1	2	1
23.....	2.07	3.50	1.25	22	36	23.5	24	1	29	29	18
24.....	2.55	3.00	2.40	1	3	20.	10	12	1	3	2
25.....	2.51	3.00	2.40	3	13	24.8	12	1	6	10	2
26.....	3.00	3.00	3.00	3	.....	24.6	9	4	2	1	2
27.....	3.50	3.50	3.50	2	.....	30.5	9	130	1	1	1
28.....	2.78	3.00	2.40	9	9	9.5	12	3	4	1½	7
29.....	3.00	3.00	3.00	4	.....	10.	6	12	1	3	.....
30.....	3.55	6.30	2.40	12	9	4.9	6	6	6	15	1
31.....	2.61	3.00	2.10	8	3	19.3	12	1	5	6	.....
Total and average	2.71	3.31	2.40	76	95	17.7	11.1	19.3	66	105	47

BRICK.											
32.....	2.76	3.00	2.64	1	2	1.6	2	6	2	1	1
33.....	3.00	3.00	3.00	5	.....	2.3	3	6	1	2	2
34.....	3.17	4.50	3.00	1	8	27.4	12	30	3	6	2
35.....	2.50	2.50	2.50	2	.....	6.5	2	30	1	1	2
Total and average	2.86	3.25	2.78	7	10	9.4	3.8	18.	7	10	7

BROOMS, BRUSHES AND BASKETS.											
36.....	1.62	2.00	1.25	1	1	20.	8	30	1	1	.....
37.....	2.70	3.50	2.25	3	4	38.6	12	3	4	3	1
38.....	2.75	2.75	2.75	2	.....	0.5	4	1	1	1	1
39.....	2.77	3.00	2.10	5	2	15.	16	6	2	5	3
Total and average	2.46	2.81	2.09	11	7	18.5	7.5	10.	8	10	5

CHAIRS.											
40.....	2.70	3.00	2.10	4	4	17.	8	1	4	4	.....
41.....	2.51	3.25	2.00	16	21	4.7	12	2	14	23	4
42.....	2.08	2.70	1.80	15	7	16.8	24	3	7	15	7
43.....	2.48	3.00	2.10	3	12	33.3	18	6	6	9	1
44.....	2.08	2.70	1.80	9	13	28.5	24	1	6	16	6
45.....	2.03	3.00	1.80	12	13	32.	24	6	9	16	7
46.....	1.75	2.00	1.50	1	1	2.3	1	1	1	1	1
47.....	2.38	3.00	1.80	16	16	28.6	12	6	13	19	11
48.....	2.40	3.60	1.80	13	7	29.5	24	3	7	13	12
49.....	2.70	3.00	2.40	1	1	52.4	24	6	1	1	1
50.....	2.77	4.50	1.80	7	10	42.	30	6	8	9	5
Total and average	2.35	3.07	1.90	97	105	26.1	18.2	3.7	76	126	55

SPECIAL INSPECTION—TABLE I.—Continued.

Running number.	PUBLIC SCHOOLS.						PAROCHIAL SCHOOLS.						BOTH SCHOOLS.		
	Number attending.	Years.			Average or above.	Below average.	Number attending.	Years.			Average or above.	Below average.	Number attending.	Years.	
		Average.	Highest.	Lowest.				Average.	Highest.	Lowest.				Av in public.	Av. in parochial.
20.....	3	6.7	7	6	2	1	2	4	4	4	2	2	3.5	3	
21.....	3	7	8	5	2	1	14	5.6	8	3	6	7	3	3.1	
22.....	2	7.5	8	7	1	1	1	8	8	8	1	7	3.5	3.5	
23.....	22	6.9	9	5	14	8	29	6.2	8	4	17	12	7	3.5	
24.....	.....	.....	.....	.....	.....	.....	12	8	8	8	2	.....	2	4.5
25.....	5	5.8	8	3	3	2	3	5	7	4	1	2	8	2.7	
26.....	3	7.1	8	7	1	2	1	2	.....	.....	.....	.....	2	3.5
27.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
28.....	10	8.3	10	6	5	5	1	9	9	9	1	.....	2	2.5
29.....	3	8.7	9	8	2	1	.....	.....	.....	.....	.....	.....	1	6.4
30.....	3	8.7	9	8	2	1	.....	.....	.....	.....	.....	.....	1	6.4
30.....	12	7.1	10	5	7	5	1	9	9	9	1	.....	8	2.3
31.....	4	6.5	8	5	2	2	7	5.4	8	3	4	3	.....	4.3
Total and average	67	5.9	8.5	5.7	39	28	60	6.6	7.6	5.7	35	25	44	3.2	3.5

BOXES (WOODEN AND PAPER).

BRICK.

32.....	2	7.5	8	7	1	1	1	6	6	6	1	.....	.....	.....
33.....	2	7	9	5	1	1	1	5	5	5	1	.....	.....	.....
34.....	5	5.6	7	4	3	2	4	6	6	6	4	.....	.....	.....
35.....	.....	.....	.....	.....	.....	.....	2	4	5	3	1	1	.....	.....
Total and average	9	6.7	8	5.3	5	4	8	5.2	5.5	5.	7	1	.....	.....

BROOMS, BRUSHES AND BASKETS.

36.....	2	5.5	6	5	1	1	.....	.....	.....	.....	.....	.....	.....	.....
37.....	5	6.2	7	6	2	3	2	4.5	5	4	1	1	.....	.....
38.....	1	7	7	7	1	.....	.....	.....	.....	.....	.....	.....	1	5
39.....	3	8	9	8	2	1	2	4.5	5	4	1	1	2	2	
Total and average	11	6.6	7.2	6.5	6	5	4	4.5	5	4	2	2	3	3.5	2.7

CHAIRS.

40.....	3	7	9	5	2	1	5	7.4	9	5	1	4	.....	.....
41.....	29	7.1	9	2	13	16	8	6.6	8	5	4	4	.....	.....
42.....	10	6.4	9	2	5	5	8	6.7	9	3	5	3	3	4	
43.....	2	5.5	7	4	1	1	7	7.1	8	6	2	5	6	3.9	
44.....	3	6	8	2	2	1	8	5.6	8	3	4	4	9	3.2	
45.....	3	6	7	5	2	1	16	7.1	8	3	4	12	5	4.3	
46.....	1	8	8	8	1	.....	1	6	6	6	1	.....	.....	.....
47.....	7	7.3	8	7	3	4	20	6.2	8	4	12	8	5	2.6	
48.....	2	7.5	8	7	1	1	12	6.4	8	4	8	4	6	3	
49.....	.....	.....	.....	.....	.....	.....	1	6	6	6	1	.....	1	5
50.....	3	8.3	9	8	2	1	5	7.4	8	6	2	3	9	2.9	
Total and average	63	6.9	8.2	5	32	31	91	6.6	7.8	4.6	44	47	44	3.6	3.7

SPECIAL INSPECTION—TABLE I.—Continued.

Running number.	WHERE BORN.			WITH WHOM LIVING.			OCCUPAT'N OF FATHER.		No. who said father was working.	No. who said parents own home.	RENT.	
	Wisconsin.	Other states.	Germany.	With one or both parents	Other relatives.	Boarding.	Labor.	Trade.			No. paying.	Average rent
20.....	7			7			7			3	4	\$6.62
21.....	15	2	7	23	1		20	4	13	16		
22.....	3			3								
23.....	40	3	15	58			50	8	17	15		
24.....	4			4			3	1				
25.....	13		3	16			13	3				
26.....	2		1	3			3			1		
27.....	1		1	2			2					
28.....	15		3	16	2		7	11				
29.....	4			4			3	1				
30.....	16	1	4	21			13	8				
31.....	6	1	4	11			11		9	9	2	2.87
Total and average.	126	7	38	168	3		132	39	39	44	6	\$4.74

BOXES (WOODEN AND PAPER).

32.....	2		1	2	1		3			3		
33.....	1		2	3			3		2	3		
34.....	9			9			4	5		7		
35.....	1		1	2			2				2	\$3.50
Total and average.	13		4	16	1		12	5	2	13	2	\$3.50

BRICK.

36.....	2			2			2		2	1		
37.....	5	1	1	7			7			4	2	\$7.75
38.....	1		1	2			1	1				
39.....	6	1		7			2	5				
Total and average.	14	2	2	18			12	6	2	5	2	\$7.75

BROOMS, BRUSHES AND BASKETS.

36.....	2			2			2		2	1		
37.....	5	1	1	7			7			4	2	\$7.75
38.....	1		1	2			1	1				
39.....	6	1		7			2	5				
Total and average.	14	2	2	18			12	6	2	5	2	\$7.75

CHAIRS.

40.....	7		1	7		1	4	4	6	6	1	\$11.00
41.....	30	2	5	37			27	10	35	32	1	8.50
42.....	20		2	22			16	6				
43.....	12		3	15			11	4				
44.....	22			22			12	10				
45.....	25			25			15	10				
46.....			2	2			2			2		
47.....	32			31	1		15	17				
48.....	20			19	1		14	6				
49.....	2			2	1		1	1				
50.....	17			17			8	9				
Total and average..	187	2	13	199	2	1	125	77	41	38	2	\$9.75

SPECIAL INSPECTION—TABLE I.—Continued.

Running number.	Total wage earners.	WAGE EARNERS 16 OR UNDER.							Average hours of labor daily.
		Total 16 years or under.	Male.	Female.	Years.		Under average age.	Under 14 years of age.	
					Average age.	Average age or above.			
51.....	115	6	6	.....	15	4	2	1	10
52.....	75	9	9	.....	14.8	7	2	1	10
53.....	39	5	2	3	14.7	4	1	1	8
54.....	130	9	.....	9	15.6	7	2	.....	8
55.....	12	2	2	.....	14.7	1	1	.....	9.5
56.....	14	6	5	1	14.9	5	1	.....	10
57.....	7	2	2	.....	14.5	.....	.....	.....	10
58.....	35	5	5	.....	14.6	2	3	.....	9
59.....	14	4	4	.....	14.7	1	3	.....	10
Total and average.....	441	48	35	13	14.8	33	15	3	9.4

CIGARS AND TOBACCO.

60.....	75	7	1	6	15.1	3	4	.....	10
61.....	60	22	5	17	15.1	12	10	.....	10
62.....	168	6	.....	6	15.5	5	1	.....	10
63.....	128	2	.....	2	15.8	1	1	.....	10
64.....	143	5	4	1	15.2	3	2	.....	10
65.....	32	5	.....	5	15.1	4	1	.....	8
Total and average.....	606	47	10	37	15.3	28	19	.....	9.7

CLOTHING.

66.....	80	35	8	27	15.3	17	18	.....	10
67.....	50	15	.....	15	15.1	6	9	1	10
68.....	150	29	6	23	15.2	19	10	1	10
69.....	43	11	2	9	14.10	8	3	.....	10
70.....	200	35	10	25	15.3	18	17	.....	10
71.....	30	4	.....	4	14.7	3	1	.....	10
72.....	110	5	3	2	14.8	3	2	2	10
73.....	28	3	.....	3	15.3	2	1	.....	10
74.....	53	15	9	6	15.	10	5	1	10
Total and average.....	744	152	38	114	15.	86	66	5	10

CONFECTIONERY AND CRACKERS.

75.....	192	14	6	8	15.1	7	7	.....	11
76.....	300	19	13	6	14.6	12	7	3	11
77.....	22	2	2	.....	14.7	1	1	1	11
Total and average.....	512	35	21	14	14.8	20	15	4	11.

COTTON AND LINEN MILLS.

75.....	192	14	6	8	15.1	7	7	.....	11
76.....	300	19	13	6	14.6	12	7	3	11
77.....	22	2	2	.....	14.7	1	1	1	11
Total and average.....	512	35	21	14	14.8	20	15	4	11.

SPECIAL INSPECTIONS.

513

SPECIAL INSPECTION—TABLE I.—Continued.

Running number.	WAGES.					TIME IN PRESENT EMPLOY.					No. having had previous employers.
	Weekly.			Average or above.	Less than average.	Wks.	Mos.	Days	Average or above.	Under average.	
	Average wages.	Highest wages.	Lowest.			Average.	Highest.	Lowest.			

CIGARS AND TOBACCO.

51.....	3.04	4.00	2.50	1	4	36.1	18	60	3	3	2
52.....	3.11	5.00	2.00	1	8	22.7	16	1	3	6	4
53.....	3.09	4.75	2.50	2	3	15.4	12	1	2	3	3
54.....	3.00	3.00	3.00	9	.....	43.	15	14	4	5	2
55.....	3.00	3.00	3.00	2	.....	1.	¼	6	2	.....	.....
56.....	1.87	3.00	1.25	2	4	46.1	24	156	2	4	.....
57.....	1.50	1.50	1.50	.....	.....	13.	5	1	1	1	.....
58.....	2.05	2.25	2.00	1	4	15.6	7	6	3	2	2
59.....	2.12	2.25	2.00	2	2	19.5	9	1	2	2	1
Total and average	2.53	3.19	2.19	23	25	23.6	11.8	27.3	22	26	14

CLOTHING.

60.....	2.03	3.00	1.50	2	5	10.7	6	21	2	5	2
61.....	2.33	3.00	1.50	9	13	22.4	36	6	8	14	.....
62.....	1.62	2.25	1.50	1	5	9.5	8	6	1	5	1
63.....	3.50	3.50	3.50	2	.....	21.5	5	130	2	.....	1
64.....	3.20	4.00	2.50	2	3	35.6	16	4	2	3	.....
65.....	1.78	2.00	1.60	2	3	23.4	6	4	4	1	.....
Total and average	2.41	2.96	2.01	18	29	20.5	12.8	28.5	19	28	4

CONFECTIONERY AND CRACKERS.

66.....	2.39	3.75	1.50	15	22	53.4	30	1	12	23	1
67.....	1.95	2.90	1.50	10	5	28.1	24	6	8	7	3
68.....	2.28	2.75	2.00	7	22	34.8	36	1	12	17	6
69.....	1.86	3.00	1.50	4	7	22.	18	2	5	6	.....
70.....	2.01	3.00	1.50	12	23	46.8	24	12	15	20	5
71.....	1.93	2.50	1.75	1	3	12.7	9	6	1	3	.....
72.....	1.50	1.50	1.50	5	.....	4.8	2	3	1	4	2
73.....	2.06	2.25	2.00	1	2	7.3	4	1	1	2	2
74.....	1.73	2.50	1.50	6	9	21.2	12	12	7	8	6
Total and average	1.96	2.68	1.64	59	93	25.6	17.6	4.8	62	90	25

COTTON AND LINEN MILLS.

75.....	2.98	3.50	2.10	11	3	39.4	24	14	7	7	.....
76.....	3.00	4.15	2.00	8	11	30.7	24	6	6	13	1
77.....	3.25	4.00	2.50	1	1	3.	5	6	1	1	1
Total and average	3.07	3.88	3.30	20	15	24.4	16.3	8.6	14	21	2

SPECIAL INSPECTION—TABLE I.—Continued.

Running number.	PUBLIC SCHOOLS.					PAROCHIAL SCHOOLS.					BOTH SCHOOLS.				
	Number attending.	Years.			Average or above. Below average.	Number attending.	Years.			Average or above. Below average.	Number attending.	Years.			
		Average.	Highest.	Lowest.			Average.	Highest.	Lowest.				Av. in public.	Av. in parochial.	
51.....	1	6	6	6	1	5	5.8	7	4	4	1	3	2.7	3	
52.....	2	6	7	5	1	4	6.1	8	1	1	3	3	2.7	3	
53.....	5	6.8	7	6	4	5	4.4	5	3	2	2	2	2	2	
54.....	5	6.8	7	6	4	4	6	7	3	2	2	2	2	2	
55.....	2	6	6	6	1	2	6	6	6	2	2	2	2	2	
56.....	1	8	8	8	1	2	6.5	7	6	1	1	3	2.6	2.6	
57.....	1	8	8	8	1	1	8	8	8	1	1	1	4	4	
58.....	2	7.5	8	7	1	1	8	8	8	1	1	2	2.5	3.5	
59.....	2	7.5	8	7	1	2	4.5	5	4	1	1	2	3	3	
Total and average..	11	6.8	7.2	6.4	8	3	26	6.1	6.8	5.4	15	11	11	2.9	3.2

CIGARS AND TOBACCO.

60.....	4	7.2	9	6	2	2	3	6.3	7	5	2	1	3	2.5	4.7
61.....	15	6.9	9	4	10	5	7	6.4	9	3	3	4	1	4	4
62.....	1	7	7	7	1	..	2	7	8	6	1	1	3	2.5	4.7
63.....	1	7	7	7	1	..	2	7	8	6	1	1	3	2.5	4.7
64.....	4	7.5	8	7	3	1	1	8	8	8	1	1	1	4	4
65.....	1	8	8	8	1	..	3	6.6	7	6	2	1	1	4	3
Total and average..	25	7.3	8.2	6.4	17	8	16	6.8	7.8	5.6	9	7	6	3.8	3.4

CLOTHING.

66.....	18	6.6	9	4	9	9	17	6.7	8	5	9	8	3	3	3.5
67.....	4	7.7	8	7	3	1	11	6	8	1	8	3	3	3	3.5
68.....	13	6.9	10	5	7	6	16	5.5	9	3	10	6	3	3	3.5
69.....	3	6	7	5	2	1	8	5.7	9	2	5	3	3	3	3.5
70.....	9	7.7	9	5	7	2	26	5.5	9	3	14	12	3	3	3.5
71.....	2	7.5	8	7	1	1	..	..	..	..	..	..	2	4.5	2
72.....	3	6	7	5	2	1	3	6.6	7	6	3	2	2	3.5	4.5
73.....	1	7	7	7	1	..	..	..	..	..	..	..	2	1	6.5
74.....	10	6.6	8	4	5	5	2	6.	6	6	2	..	3	5.6	2.1
Total and average..	60	7.	8.2	5.5	35	25	83	6.	8	3.7	51	32	9	3.6	3.7

CONFECTIONERY AND CRACKERS.

75.....	2	5	7	3	1	1	8	5.3	7	3	5	3	4	3.	3.5
76.....	1	4	4	4	1	..	13	6.1	8	6	8	5	5	2.	4.7
77.....	2	6	7	5	1	..	2	6.	6	6	2	..	..	..	..
Total and average..	3	4.5	5.5	3.5	2	1	23	5.8	7	5	15	8	9	2.5	4.1

COTTON AND LINEN MILLS.

75.....	2	5	7	3	1	1	8	5.3	7	3	5	3	4	3.	3.5
76.....	1	4	4	4	1	..	13	6.1	8	6	8	5	5	2.	4.7
77.....	2	6	7	5	1	..	2	6.	6	6	2	..	..	..	..
Total and average..	3	4.5	5.5	3.5	2	1	23	5.8	7	5	15	8	9	2.5	4.1

SPECIAL INSPECTION—TABLE I.—Continued.

Running number.	WHERE BORN.			WITH WHOM LIVING.			OCCUPAT'N OF FATHER.		No. who said father was working.	No. who said parents own home.	RENT.	
	Wisconsin.	Other states.	Germany.	With one or both parents	Other relatives.	Boarding.	Labor.	Trade.			No. paying.	Average rent
51.....	6			6			6					
52.....	9			9			9				1	\$5.00
53.....	5			5			5				5	
54.....	9			9			9					
55.....	2			2			2				1	
56.....	6			6			6					
57.....	2			2				2				
58.....	4		1	5			3	2				
59.....	4			4			3	1				
Total and average..	47		1	48			43	5		11	1	\$5.00

CIGARS AND TOBACCO.

60.....	6	1		7			5	2	5	4	1	\$5.00
61.....	15	1	6	21	1		12	10	12	12	7	6.70
62.....	6			6			2	4				
63.....	1	1		2			1	1				
64.....	3	1	1	5			1	4				
65.....	5			5			1	4				
Total and average..	36	4	7	46	1		22	25	17	16	8	\$5.85

CLOTHING.

66.....	27	2	6	35			25	10	27	23	9	\$4.61
67.....	14		1	15			8	7	8	5	5	6.48
68.....	26	3		29			26	3	19	21	7	6.07
69.....	7		4	10	1		7	4	2	6		
70.....	27	2	6	34	1		26	9	23	9	13	5.94
71.....	2	2		4				4				
72.....	3	1	1	5			2	3				
73.....	3			3			1	2				
74.....	10	3	2	15			9	6		2		
Total and average..	119	13	20	150	2		104	48	79	66	34	\$5.77

CONFECTIONERY AND CRACKERS.

75.....	13		1	14			9	5		1		
76.....	12		7	19			15	4		1		
77.....	1		1	2			2					
Total and average..	26		9	35			26	9		2		

COTTON AND LINEN MILLS.

75.....	13		1	14			9	5		1		
76.....	12		7	19			15	4		1		
77.....	1		1	2			2					
Total and average..	26		9	35			26	9		2		

SPECIAL INSPECTION—TABLE I.—Continued.

Running number.	WAGE EARNERS 16 OR UNDER.								
	Total wage earners.	Total 16 years or under.	Male.	Female.	Years.		Under average age.	Under 14 years of age.	Average hours of labor daily.
					Average age.	Average age or above.			
FURNITURE.									
78.....	91	3	3	.....	15.3	2	1	.....	10
79.....	185	15	15	.....	15.1	8	7	.....	10
80.....	65	2	2	.....	15.1	1	1	.....	10
81.....	54	3	3	.....	14.8	2	1	.....	10
82.....	36	5	5	.....	14.6	2	3	.....	10
83.....	600	15	15	.....	14.8	11	4	.....	10
84.....	86	13	13	.....	14.7	8	5	1	10
85.....	117	19	19	.....	15.2	9	10	.....	10
86.....	107	16	16	.....	14.7	8	8	2	8
87.....	33	6	6	.....	14.8	4	2	.....	10
88.....	240	16	16	.....	15.2	13	3	.....	10
89.....	41	3	3	.....	15	2	1	.....	8
Total and average.....	1,655	116	116	.....	14.9	70	46	3	9.9
IRON GOODS (MALLEABLE).									
90.....	50	10	10	.....	15	5	5	.....	10
91.....	30	6	6	.....	15.1	4	2	.....	10
92.....	42	8	6	2	15.2	4	4	.....	10
93.....	11	5	5	.....	14.2	2	3	1	10
94.....	475	49	49	.....	15.3	25	24	2	9.8
95.....	59	8	8	.....	15.3	6	2	.....	10
96.....	650	38	38	.....	15.2	18	20	3	10
97.....	57	4	4	.....	14.8	2	2	.....	10
98.....	126	12	12	.....	15	7	5	.....	10
99.....	290	14	14	.....	14.8	7	7	1	10
100.....	237	19	19	.....	14.7	11	8	.....	10
101.....	275	7	7	.....	14.9	4	3	1	10
Total and average.....	2,302	180	178	2	14.9	95	85	8	9.9
KNIT GOODS.									
102.....	400	123	11	112	15	44	79	.....	10
103.....	375	136	25	111	15	51	85	1	10
104.....	150	37	.....	37	15	15	22	2	10
105.....	400	77	3	74	14.8	41	36	2	10
106.....	260	62	32	30	14.7	36	26	3	10
107.....	134	27	1	26	14.6	19	8	.....	10
108.....	28	3	.....	3	15	3	.....	.....	10
109.....	87	6	1	5	15.2	4	2	.....	10
110.....	104	23	2	21	15	14	9	.....	10
111.....	125	8	1	7	13.8	5	3	4	10
Total and average.....	2,063	502	76	426	14.8	232	270	12	10

SPECIAL INSPECTIONS.

SPECIAL INSPECTION—TABLE I.—Continued.

Running number.	WAGES.					TIME IN PRESENT EMPLOY.					No. having had previous employers.
	Weekly.			Average or above.	Less than average.	Wks.	Mos.	Days	Average or above.	Under average.	
	Average wages.	Highest wages.	Lowest.								
78.....	\$2.60	\$3.00	\$2.40	1	2	6.6	2	18	2	1	.....
79.....	2.59	3.00	2.10	2	12	13.3	12	3	2	8	.....
80.....	3.00	3.00	3.00	.....	.....	1.6	3/4	1	1	1	.....
81.....	3.30	3.00	3.00	2	.....	39	12	156	1	2	.....
82.....	3.27	3.75	2.40	3	.....	.....	.....	.....	.....	.....	.....
83.....	2.42	3.00	1.80	3	2	20	12	1	2	3	.....
84.....	2.43	3.00	2.10	6	12	19.9	12	26	6	9	.....
85.....	2.76	3.60	2.40	4	7	31	24	4	4	9	.....
86.....	2.62	5.40	1.92	4	15	24.7	36	2	9	10	.....
87.....	3.08	3.50	3.00	4	12	9.5	12	1	3	13	.....
88.....	2.81	3.60	2.40	1	5	17.5	12	6	4	2	.....
89.....	2.46	3.00	1.92	4	12	52.1	24	12	6	10	.....
Total and average..	\$2.77	\$3.40	\$2.37	35	81	21.7	14.2	25.8	46	70	33

FURNITURE.

IRON GOODS (MALLEABLE).

90.....	\$2.70	\$3.50	\$2.50	3	7	27.7	30	14	4	6	1
91.....	2.12	2.50	2.00	2	4	15.8	12	21	3	3	3
92.....	3.09	4.00	2.50	2	6	26.2	12	14	3	5	5
93.....	2.90	3.50	2.50	2	3	23.4	8	60	2	3	3
94.....	3.66	6.45	1.75	17	32	27.6	24	1	15	34	23
95.....	2.78	3.00	2.50	4	4	7.1	4	2	3	5	3
96.....	3.25	5.50	2.50	11	27	23.6	24	2	12	26	18
97.....	2.37	2.50	2.00	3	1	19	12	2	1	3	2
98.....	2.09	2.40	1.75	7	5	9.2	12	1	2	10	2
99.....	3.98	5.40	3.00	9	5	13.1	12	6	4	10	13
100.....	3.65	5.00	3.00	8	11	21.5	18	6	8	11	11
101.....	3.07	3.50	3.00	1	6	23.1	12	5	3	4	2
Total and average..	\$2.94	\$3.94	\$2.41	69	111	19.8	15	11.1	60	120	86

KNIT GOODS.

102.....	\$1.86	\$2.75	\$1.50	51	72	25.5	36	2	46	77	32
103.....	2.16	5.50	1.50	65	13	23.7	36	1	31	105	46
104.....	2.44	3.25	1.50	19	18	35.9	24	1	13	24	3
105.....	1.66	3.00	1.10	26	51	13.6	12	1	25	52	18
106.....	4.17	7.00	2.10	31	31	29.5	24	1	27	35	2
107.....	1.60	3.50	1.25	9	18	42.1	36	1	11	16	.....
108.....	2.20	3.00	1.50	1	2	23	6	104	2	1	.....
109.....	2.10	3.60	1.50	2	4	18.5	8	12	2	4	.....
110.....	3.07	8.50	2.40	5	18	39.9	24	1	8	15	4
111.....	2.62	3.00	2.50	1	7	27.5	24	3	2	6	.....
Total and average..	2.38	4.31	1.68	208	294	27.2	23	12.7	167	335	105

SPECIAL INSPECTION—TABLE I.—Continued.

Running number.	WHERE BORN.			WITH WHOM LIVING.			OCCUPAT'N OF FATHER.		No. who said father was working.	No. who said parents own home.	RENT.	
	Wisconsin.	Other states.	Germany.	With one or both parents	Other relatives.	Boarding.	Labor.	Trade.			No. paying.	Average rent

FURNITURE.

78.....	2	1		3			3					
79.....	15			14	1		7	8				
80.....	2			2			1	1				
81.....	3			3			2	1				
82.....	3		2	5			5					
83.....	15			15			7	8				
84.....	11	1	1	13			12	1				
85.....	17	1	1	18	1		10	9				
86.....	16			15		1	10	6				
87.....	3	2	1	6			3	3				
88.....	16			16			11	5				
89.....	2		1	3			1	2				
Total and average..	105	5	6	113	1	1	72	44				

IRON GOODS (MALLEABLE).

90.....	6	1	3	10			9	1	6	6		
91.....	6			6			4			4	2	\$3.75
92.....	8			8			7	1				
93.....	5			5			3	2		4	1	3.00
94.....	36		13	48	1		40	9	15	30	5	3.75
95.....	6		2	7	1		8			6	1	4.50
96.....	28	1	9	37	1		28	10	7	24	6	4.00
97.....	4			4			4			2	2	5.00
98.....	10	1	1	12			7	5				
99.....	10	1	3	14			13	1				
100.....	12	2	5	19			5	14				
101.....	5		2	7			2	5				
Total and average..	136	6	38	177	3		130	50	28	76	17	\$4.00

KNIT GOODS.

102.....	86	5	32	122	1		109	14				
103.....	92	5	39	134	1		120	16	2	8	4	\$5.87
104.....	28	2	7	37			37			5		
105.....	59	3	15	77			69	8				
106.....	29	10	23	60	2		24	38				
107.....	18	2	7	27			18	9				
108.....	1		2	3			2	1		1		
109.....	5		1	4	2		4	2				
110.....	23			23			9	14				
111.....	7		1	8			6	2	7	8		
Total and average..	348	27	127	495	7		398	104	9	22	4	\$5.87

SPECIAL INSPECTION—TABLE I.—Continued.

Running number.	WAGE EARNERS 16 OR UNDER.								Average hours of labor daily.
	Total wage earners.	Total 16 years or under.	Male.	Female.	Years.		Under average age.	Under 14 years of age.	
					Average age.	Average age or above.			
LAGER BEER (BOTTLING).									
112.....	373	18	13	5	15.5	11	7	.....	9.6
113.....	131	7	4	3	15	4	3	.....	10
114.....	55	6	6	.....	15.3	3	3	.....	10
115.....	1,187	83	29	54	14.8	60	23	.....	10
116.....	636	13	4	9	15.4	8	5	.....	10
117.....	66	5	5	.....	15	2	3	.....	10
118.....	61	3	3	.....	15.7	2	1	.....	10
Total and average.....	2,599	135	64	71	15.2	90	45	.....	9.9

LITHOGRAPHING.

119.....	125	9	9	.....	15.5	6	3	.....	9.9
120.....	40	5	5	.....	16	3	2	.....	10
121.....	84	15	15	.....	15	8	7	.....	10
122.....	14	2	2	.....	13.5	1	1	1	10
123.....	40	8	8	.....	15.6	5	3	.....	9
Total and average.....	303	39	39	.....	15.1	23	16	1	9.8

LUMBER, LATH AND SHINGLES.

124.....	42	2	2	.....	15	1	1	1	10
125.....	34	5	5	.....	15.8	4	1	.....	10
126.....	207	2	2	.....	13.5	1	1	1	10
127.....	101	3	3	.....	14	2	1	1	10
128.....	350	88	88	.....	14.2	30	58	13	10
Total and average.....	734	100	100	.....	15.5	38	62	16	10

MIXED TEXTILES.

129.....	258	113	46	67	14.7	61	52	8	10
130.....	55	23	2	21	15.8	12	11	.....	10
131.....	28	16	16	.....	14.9	8	8	.....	10
132.....	36	2	.....	2	15.1	1	1	.....	10
Total and average.....	377	154	64	90	15.1	82	72	8	10

SPECIAL INSPECTION—TABLE I.—Continued.

Running number.	WAGES.					TIME IN PRESENT EMPLOY.					No. having had previous employers.
	Weekly.			Average or above.	Less than average.	Wks.	Mos.	Days	Average or above.	Under average.	
	Average wages.	Highest wages.	Lowest.			Average.	Highest.	Lowest.			
LAGER BEER (BOTTLING).											
112.....	\$3.00	\$3.30	\$2.70	15	3	51.1	24	14	6	12	4
113.....	2.85	3.25	2.50	4	3	20.5	12	14	3	4	4
114.....	3.56	6.00	2.70	2	4	12.1	11	21	4	2	4
115.....	2.48	3.60	2.25	8	75	28.5	24	14	36	47	24
116.....	2.46	3.00	2.00	10	3	16.9	12	1	4	9	5
117.....	3.50	3.50	3.50	5	.....	16.2	12	6	2	3	4
118.....	3.17	3.50	3.00	1	2	1.8	$\frac{3}{4}$	2	2	1	3
Total and average..	\$3.00	\$3.73	\$2.66	45	90	21.1	13.6	10.3	57	78	48
LITHOGRAPHING.											
119.....	\$2.77	\$3.50	\$2.50	3	6	34.5	24	21	4	5	5
120.....	3.12	4.00	2.10	2	3	61.8	30	36	2	3	.....
121.....	2.40	3.50	1.50	7	8	26.2	24	1	5	10	5
122.....	1.87	2.00	1.75	1	1	5	$1\frac{1}{2}$	4	1	1	.....
123.....	2.68	3.50	2.00	4	4	64.5	24	6	4	4	2
Total and average..	\$2.57	\$3.30	\$1.97	17	22	38.4	26.2	13.6	16	23	12
LUMBER, LATH AND SHINGLES.											
124.....	\$3.00	\$3.00	\$3.00	2	.....	27.5	12	18	1	1	.....
125.....	3.30	4.50	3.00	1	4	17	8	2	2	3	3
126.....	4.50	6.00	3.00	1	1	26	12	2	1	1	.....
127.....	2.80	3.00	2.40	2	1	2.6	$\frac{1}{2}$	10	2	1	.....
128.....	2.99	3.60	2.70	54	34	22.2	30	1	27	61	1
Total and average..	\$3.31	\$4.02	\$2.82	60	40	19.6	12.8	6.6	33	67	4
MIXED TEXTILES.											
129.....	\$1.98	\$4.00	\$0.59	58	55	26.9	36	1	27	86	24
130.....	3.05	5.00	2.50	7	16	50.9	24	14	8	15	2
131.....	2.15	2.75	1.75	6	10	31.1	24	6	4	12	4
132.....	2.40	2.40	2.40	2	.....	2.5	$\frac{3}{4}$	12	1	1	1
Total and average..	\$2.39	\$3.54	\$1.81	73	81	27.8	21.1	8.2	40	114	31

SPECIAL INSPECTION—TABLE I.—Continued.

Running number.	PUBLIC SCHOOLS.					PAROCHIAL SCHOOLS.					BOTH SCHOOLS.			
	Number attending.	Years.			Average or above. Below average.	Number attending.	Years.			Average or above. Below average.	Number attending.	Years.		
		Average.	Highest.	Lowest.			Average.	Highest.	Lowest.			Average or above. Below average.	Av. in public.	Av. in parochial.
112.....	8	6.1	8	3	3	5	10	6.2	9	4	6	.....	.....
113.....	1	8	8	8	1	.....	5	6.4	8	1	4	1	3
114.....	.....	.....	.....	.....	.....	.....	6	5	6	3	2	.....	3
115.....	26	6	8	1	22	4	57	5.5	9	30	27	.....	.....
116.....	4	6.2	7	5	2	2	9	5.3	8	5	4	.....	.....
117.....	2	7	8	6	1	1	2	5.5	6	1	1	1	2	
118.....	1	7	7	7	1	.....	.....	.....	.....	.....	.....	2	3
Total and average..	42	6.6	7.6	5	30	12	89	5.6	7.6	3.8	45	44	4	2.7

LAGER BEER (BOTTLING).

112.....	8	6.1	8	3	3	5	10	6.2	9	4	6	.....	.....
113.....	1	8	8	8	1	.....	5	6.4	8	1	4	1	3
114.....	.....	.....	.....	.....	.....	.....	6	5	6	3	2	.....	3
115.....	26	6	8	1	22	4	57	5.5	9	30	27	.....	.....
116.....	4	6.2	7	5	2	2	9	5.3	8	5	4	.....	.....
117.....	2	7	8	6	1	1	2	5.5	6	1	1	1	2	
118.....	1	7	7	7	1	.....	.....	.....	.....	.....	.....	2	3
Total and average..	42	6.6	7.6	5	30	12	89	5.6	7.6	3.8	45	44	4	2.7

LITHOGRAPHING.

119.....	6	6.6	8	6	3	3	3	7.3	8	7	1	2	.....	.....
120.....	2	7.5	8	7	1	1	3	7.3	8	7	1	2	.....	.....
121.....	11	7.1	9	5	4	7	4	7.2	8	6	2	2	.....	.....
122.....	.....	.....	.....	.....	.....	.....	2	6	8	4	1	1	.....	.....
123.....	3	7	7	7	3	.....	5	6.8	8	6	3	2	.....	.....
Total and average..	22	7.5	8	6.2	11	11	17	6.9	8	6	8	9	.....	.....

LUMBER, LATH AND SHINGLES.

124.....	1	6	6	6	1	.....	1	8	8	8	1	.....	.....	.....
125.....	3	7	9	5	2	1	2	7	7	7	2	.....	.....	.....
126.....	2	6	8	4	1	1	.....	.....	.....	.....	.....	.....	.....	.....
127.....	3	7.6	8	7	2	1	.....	.....	.....	.....	.....	.....	.....	.....
128.....	47	7	9	3	33	14	10	5.8	9	5	6	4	29	3.8
Total and average..	56	6.7	8	5	39	17	13	6.9	8	6.6	9	4	29	3.8

MIXED TEXTILES.

129.....	12	6.4	9	1	7	5	101	5.1	9	1	49	52	.....	.....
130.....	8	8.5	11	6	3	5	15	6.4	9	1	7	8	.....	.....
131.....	6	6.1	7	5	2	4	8	6.6	8	6	5	3	2	3
132.....	1	9	9	9	1	.....	1	8	8	8	1	.....	.....	.....
Total and average..	27	7.5	9	5.2	13	14	125	6.5	8.5	4	62	63	2	3

SPECIAL INSPECTION—TABLE I.—Continued.

Running number.	WHERE BORN.			WITH WHOM LIVING.			OCCUPAT'N OF FATHER.		No. who said father was working.	No. who said parents own home.	RENT.	
	Wisconsin.	Other states.	Germany.	With one or both parents	Other relatives.	Boarding.	Labor.	Trade.			No. paying.	Average rent
LAGER BEER (BOTTLING).												
112.....	13	1	4	18	.....	.....	16	2	.....	12	5	\$6.40
113.....	6	.....	1	7	.....	.....	6	1	.....	5	2	4.25
114.....	5	.....	1	6	.....	.....	6	.....	.....	4	1	3.50
115.....	55	4	24	83	.....	.....	76	7	26	59	16	5.93
116.....	9	.....	4	13	.....	.....	13	.....	8	10	.....	.....
117.....	4	.....	1	5	.....	.....	2	3	.....	1	.....	.....
118.....	3	.....	.....	3	.....	.....	1	2	.....	.....	.....	.....
Total and average.	95	5	35	135	.....	.....	120	15	34	91	24	\$5.02

LITHOGRAPHING.

119.....	7	2	.....	9	.....	.....	7	2	.....	6	.....	.....
120.....	3	2	.....	5	.....	.....	5	.....	.....	2	1	\$7.00
121.....	11	1	3	15	.....	.....	9	6	7	8	6	5.33
122.....	2	.....	.....	2	.....	.....	2	.....	.....	.....	.....	.....
123.....	7	1	.....	8	.....	.....	5	3	6	4	2	7.50
Total and average.	30	6	3	39	.....	.....	28	11	13	20	9	\$6.61

LUMBER, LATH AND SHINGLES.

124.....	2	.....	.....	1	1	.....	1	1	1	1	.....	.....
125.....	5	.....	.....	5	.....	.....	4	1	1	1	1	\$7.00
126.....	2	.....	.....	2	.....	.....	1	1	.....	.....	.....	.....
127.....	2	1	.....	3	.....	.....	2	1	.....	.....	.....	.....
128.....	65	9	14	88	.....	.....	61	27	.....	.....	.....	.....
Total and average..	76	10	14	99	1	.....	69	31	2	2	1	7.00

MIXED TEXTILES.

129.....	75	3	35	111	2	.....	96	17	14	27	1	\$3.50
130.....	19	2	2	23	.....	.....	18	5	20	16	.....	.....
131.....	14	.....	2	15	1	.....	15	1	.....	.....	.....	.....
132.....	2	.....	.....	2	.....	.....	1	1	.....	.....	.....	.....
Total and average..	110	5	39	151	3	.....	130	24	34	42	1	\$3.50

SPECIAL INSPECTION—TABLE I.—Continued.

Running number.	WAGE EARNERS 16 OR UNDER.								Average hours of labor daily.
	Total wage earners.	Total 16 years or under.	Male.	Female.	Years.		Under average age.	Under 14 years of age.	
					Average age.	Average age or above.			

OFFICE AND SALOON FURNITURE.

133.....	60	2	2	.....	14.6	1	1	1	10
134.....	50	5	5	.....	15	3	2	1	10
135.....	71	2	2	.....	14.8	1	1	.....	10
136.....	98	3	3	.....	15.2	2	1	.....	10
137.....	236	13	13	.....	15	7	6	1	10
Total and average.....	515	25	25	.....	14.9	14	11	3	10

SASH, DOORS AND BLINDS.

138.....	250	20	20	.....	15.3	9	11	1	10
139.....	42	8	8	.....	14.6	6	2	1	10
140.....	400	62	62	.....	14.9	37	25	7	10
141.....	105	11	11	.....	15.3	6	5	.....	10
142.....	287	20	20	.....	15.2	12	8	.....	10
143.....	100	6	6	.....	15.3	2	4	.....	9
144.....	174	8	8	.....	15.4	5	3	.....	8
145.....	53	5	5	.....	14.8	3	2	.....	10
146.....	210	13	10	3	14.9	7	6	.....	8
147.....	190	13	13	.....	15.4	8	5	.....	10
148.....	721	44	37	7	14.8	21	23	1	10
149.....	92	2	2	.....	15	1	1	.....	10
150.....	163	17	17	.....	15.2	9	8	.....	8
Total and average.....	2,787	229	219	10	15.1	126	103	10	9.4

SHEET METAL GOODS.

151.....	16	5	5	.....	15.3	4	1	.....	10
152.....	455	71	48	23	15.2	37	34	.....	10
153.....	900	207	155	52	15.2	114	93	.....	10
154.....	80	10	10	.....	14.1	7	3	3	10
155.....	200	31	31	.....	15.2	17	14	.....	10
156.....	31	3	3	.....	15.2	1	2	.....	10
157.....	50	16	16	.....	14.9	7	9	1	10
Total and average.....	1,732	343	268	75	15	187	156	4	10

SPECIAL INSPECTION—TABLE I.—Continued.

Running number.	WAGES.					TIME IN PRESENT EMPLOY.					No. having had previous employ.rs.
	Weekly.			Average or above.	Less than average.	Wks.	Mos.	Days	Average or above.	Under average.	
	Average wages.	Highest wages.	Lowest.			Average.	Highest.	Lowest.			

OFFICE AND SALOON FURNITURE.

133.....	\$3.12	\$3.25	\$3.00	1	1	18.5	6	52	1	1	2
134.....	2.40	3.50	2.00	2	3	21.4	8	21	3	2	5
135.....	2.50	3.00	2.00	1	1	27.5	11	65	1	1	.....
136.....	2.61	3.00	2.33	1	2	53.3	24	2	1	2	1
137.....	3.11	4.20	2.40	4	9	25.2	36	6	4	9	9
Total and average..	\$2.75	\$3.39	\$2.34	9	16	2.91	17	29.2	10	15	17

SASH, DOORS AND BLINDS.

138.....	\$2.34	\$3.60	\$2.00	5	15	24.3	23	6	7	13	5
139.....	2.62	3.60	2.40	2	6	19.9	24	21	1	7	4
140.....	2.40	4.50	1.32	25	37	22	36	1	21	41	27
141.....	2.32	3.00	2.10	5	6	12	18	6	2	9	6
142.....	2.91	3.60	2.40	16	4	31.5	12	14	12	8	5
143.....	2.26	3.00	1.92	3	3	28.8	12	60	2	4	1
144.....	2.56	3.30	1.92	4	4	33	24	21	3	5	5
145.....	2.40	2.40	2.40	5	.....	2.2	1	1	3	2	2
146.....	1.97	3.00	1.44	4	9	28.8	24	6	5	8	4
147.....	2.35	2.70	2.10	10	3	33.7	24	30	4	9	9
148.....	2.38	3.00	2.10	22	22	30.7	36	6	17	27	12
149.....	2.10	2.10	2.10	2	.....	5.5	1½	30	1	1	1
150.....	2.45	3.00	2.10	3	14	22.9	24	2	5	12	8
Total and average..	\$2.39	\$3.14	\$2.02	106	123	22.7	20	15.7	83	146	89

SHEET METAL GOODS.

151.....	\$2.74	\$3.00	\$2.45	3	2	16.2	12	9	1	4	2
152.....	2.79	3.50	2.00	22	49	27.3	12	1	25	46	29
153.....	2.62	4.00	2.00	97	110	30.6	30	1	85	122	67
154.....	2.05	2.25	2.00	2	8	9.3	7	1	3	7	7
155.....	2.35	3.00	2.00	13	18	16.1	18	6	11	20	14
156.....	2.50	3.50	2.00	1	2	55	36	1	1	2	.....
157.....	1.86	2.25	1.75	5	11	4.1	2	6	8	8	3
Total and average..	\$2.41	\$3.07	\$2.03	143	200	2.26	16.7	3.5	134	209	122

SPECIAL INSPECTION—TABLE I.—Continued.

Running number.	PUBLIC SCHOOLS.					PAROCHIAL SCHOOLS.					BOTH SCHOOLS.				
	Number attending.	Years.			Average or above.	Below average.	Number attending.	Years.			Average or above.	Below average.	Number attending.	Years.	
		Average.	Highest.	Lowest.				Average.	Highest.	Lowest.				Average or above.	Below average.	Av in public.	Av. in pa- rochial.
133.....						2	5.5	6	5	1	1				
134.....	1	9	9	9	1	4	6.7	8	6	2	2				
135.....	1	3	3	3	1	1	3	8	8	1	1				
136.....	1	6	6	6	1	2	6.5	7	6	1	1				
137.....	8	6.5	9½	4	4	4	2	7	8	6	1	1	2	2.5	4
Total and average..	11	6.1	6.8	5.5	7	4	11	6.7	7.4	6.2	6	5	2	2.5	4

OFFICE AND SALOON FURNITURE.

138.....	3	6.3	7	6	1	2	17	4.7	8	2	9	8			
139.....	1	7	7	7	1	1	6	5.8	6	5	5	1	1	3	3
140.....	15	6	8	4	9	6	45	5.3	9	2	26	19	2	2	2.5
141.....	6	7.3	12	5	1	5	5	6	8	4	3	2			
142.....	4	6.5	8	5	2	2	2	6.5	7	6	1	1	14	3.8	3
143.....							4	6.2	7	6	1	3	1	3	3
144.....	3	7	7	6	2	1	2	7.5	7	6	1	1	3	3	3.6
145.....	3	8	8	8	3	3	1	7	7	7	1	1	1	7	4
146.....	3	7	7	7	3	3	8	6.2	8	5	3	5	2	3.6	4
147.....	2	6.5	8	5	1	1	10	7.1	9	6	2	8	1	2	6
148.....	10	6.6	10	2	6	4	32	6.2	9	3	14	18	2	2	4.5
149.....	1	9	9	9	1	1							1	6	1
150.....	4	5.5	8	3	2	2	11	6.1	7	3	6	5	1	5	2
Total and average..	55	6.8	8.2	5.6	32	23	143	6.2	7.6	4.6	72	71	29	3.6	3.3

SASH, DOORS AND BLINDS.

138.....	3	6.3	7	6	1	2	17	4.7	8	2	9	8			
139.....	1	7	7	7	1	1	6	5.8	6	5	5	1	1	3	3
140.....	15	6	8	4	9	6	45	5.3	9	2	26	19	2	2	2.5
141.....	6	7.3	12	5	1	5	5	6	8	4	3	2			
142.....	4	6.5	8	5	2	2	2	6.5	7	6	1	1	14	3.8	3
143.....							4	6.2	7	6	1	3	1	3	3
144.....	3	7	7	6	2	1	2	7.5	7	6	1	1	3	3	3.6
145.....	3	8	8	8	3	3	1	7	7	7	1	1	1	7	4
146.....	3	7	7	7	3	3	8	6.2	8	5	3	5	2	3.6	4
147.....	2	6.5	8	5	1	1	10	7.1	9	6	2	8	1	2	6
148.....	10	6.6	10	2	6	4	32	6.2	9	3	14	18	2	2	4.5
149.....	1	9	9	9	1	1							1	6	1
150.....	4	5.5	8	3	2	2	11	6.1	7	3	6	5	1	5	2
Total and average..	55	6.8	8.2	5.6	32	23	143	6.2	7.6	4.6	72	71	29	3.6	3.3

SHEET METAL GOODS.

151.....	1	9	9	9	1	1	4	4.5	7	3	1	3			
152.....	13	6.1	8	2	7	6	53	6.1	9	2	29	24	5	3.6	3.6
153.....	38	7	9	3	24	14	160	5.5	9	1	94	66	9	3.3	3.9
154.....	1	6	6	6	1	1	9	6.4	8	4	6	3			
155.....	4	2.5	6	1	1	3	24	5.1	8	3	12	12	3	4	4.2
156.....	1	3	3	3	1	1	1	6	6	6	1	1	1	3	3
157.....	7	6.7	9	3	5	2	9	5.4	8	2	5	4			
Total and average..	65	5.7	7.1	3.7	40	25	260	5.5	7.8	3.	148	112	18	3.5	3.7

SPECIAL INSPECTIONS.

527

SPECIAL INSPECTION—TABLE I.—Continued.

Running number.	WHERE BORN.			WITH WHOM LIVING.			OCCUPAT'N OF FATHER.		No. who said father was working.	No. who said pa. rents own home.	RENT.	
	Wisconsin.	Other states.	Germany.	With one or both parents	Other relatives.	Boarding.	Labor.	Trade.			No. paying.	Average rent

OFFICE AND SALOON FURNITURE.

133.....	2			2			2			1		
134.....	4		1	5			5		4	1		
135.....			2	2			2				2	475
136.....	2		1	3			2	1		1	1	800
137.....	8	2	3	13			5	8				
Total and average..	16	2	7	25			16	9	4	3	3	6.37

SASH, DOORS AND BLINDS.

138.....	13	1	6	19	1		19	1	10	15	4	5.72
139.....	7		1	8			6	2		6	2	5.50
140.....	39	2	21	61	1		58	4	20	31	23	4.63
141.....	8	1	2	10	1		9	2		7	2	9.75
142.....	16		4	20			15	5				
143.....	6			6			4	2				
144.....	8			8			7	1				
145.....	4	1		5				5				
146.....	12		1	13			11	2				
147.....	13			13			11	2				
148.....	41		3	44			29	15				
149.....	2			2			1	1				
150.....	17			17			12	5				
Total and average..	186	5	38	226	3		182	47	30	59	31	6.40

SHEET METAL GOODS.

151.....	2	1	2	5			5					
152.....	71			69	1	1	51	20				
153.....	185	1	21	205	2		145	62		31	1	\$3.00
154.....	10			10			8	2			1	4.00
155.....	18		13	30	1		30	1				
156.....	2	1		3			3			2		
157.....	11		5	16			15	1	14	12		
Total and average..	299	3	41	338	4	1	257	86	14	45	2	\$3.50

SPECIAL INSPECTION—TABLE I.—Continued.

Running number.	Total wage earners.	WAGE EARNERS 16 OR UNDER.							Average hours of labor daily.
		Total 16 years or under.	Male.	Female.	Years.		Under average age.	Under 14 years of age.	
					Average age.	Average age or above.			

TRUNKS AND VALISES.

158.....	325	46	30	16	15.1	20	26	.....	10
159.....	110	7	7	.....	15.3	4	3	.....	10
160.....	305	19	19	.....	15	11	8	1	10
161.....	125	11	11	.....	14.9	5	6	.....	10
162.....	130	4	3	1	15.8	2	2	.....	8
163.....	90	13	11	2	14.6	8	5	.....	10
Total and average.....	1,085	100	81	19	15.1	50	50	1	9.6

WAGONS, CARRIAGES AND SLEIGHS.

164.....	26	3	3	.....	15.3	1	2	.....	10
165.....	100	4	4	.....	15.2	2	2	.....	10
166.....	400	3	3	.....	15.2	2	1	.....	10
167.....	324	2	2	.....	15	1	1	.....	10
168.....	70	3	3	.....	14.6	2	1	.....	10
169.....	365	10	10	.....	15.1	5	5	.....	10
170.....	400	3	3	.....	14.6	1	2	1	10
Total and average.....	1,685	28	28	.....	15	14	14	1	10

WOOLEN AND WORSTED GOODS.

171.....	170	27	5	22	15.3	11	16	.....	10
172.....	50	6	.....	6	14.3	4	2	1	10
173.....	75	3	2	1	14	3	.....	.....	10
174.....	72	2	1	1	16	1	1	.....	10
175.....	150	8	2	6	15.2	6	2	.....	10
176.....	80	3	2	1	15.3	2	1	.....	10
Total and average.....	597	49	12	37	15.1	27	22	1	10

SPECIAL INSPECTION—TABLE I.—Continued.

Running number.	WAGES.					TIME IN PRESENT EMPLOY.					No. having had previous employers.
	Weekly.			Average or above.	Less than average.	Wks.	Mos.	Days	Average or above.	Under average.	
	Average wages.	Highest wages.	Lowest.			Average.	Highest.	Lowest.			

TRUNKS AND VALISES.

158.....	\$2.64	\$4.00	\$2.00	14	32	30.7	24	30	22	24	3
159.....	2.78	3.50	2.00	4	3	21.4	18	21	4	3	3
160.....	2.14	4.00	1.50	5	14	35.5	30	21	7	12	6
161.....	\$2.77	\$3.60	\$2.15	3	8	21.3	24	3	4	7	3
162.....	2.87	2.00	2.50	3	1	43	24	120	1	3	3
163.....	2.00	3.00	1.50	8	5	21.3	24	14	7	6	.....
Total and average..	\$2.53	\$3.51	\$1.94	37	63	28.9	24.	15.5	45	55	28

WAGONS, CARRIAGES AND SLEIGHS.

164.....	\$1.66	\$2.00	\$1.50	1	2	5	2	4	2	1	2
165.....	3.67	3.90	3.60	1	3	18.7	12	21	1	3	3
166.....	3.25	3.50	2.75	2	1	7	4	6	1	2	2
167.....	3.42	3.60	3.25	1	1	7.5	3	12	1	1	2
168.....	3.00	3.00	3.00	3	.....	28	7	78	1	2	.....
169.....	3.57	4.80	2.70	4	6	15.8	10	6	5	5	3
170.....	2.88	3.25	2.50	2	1	18.3	8	21	1	2	3
Total and average..	\$3.06	\$3.43	\$2.74	14	14	14.3	6.5	21.1	12	16	20

WOOLEN AND WORSTED GOODS.

171.....	\$2.18	\$3.03	\$1.50	17	10	28.6	30	1	10	17	.....
172.....	2.28	3.20	1.20	4	2	18	12	6	3	3	.....
173.....	2.40	2.40	2.40	3	.....	13	8	3	1	2	.....
174.....	2.40	2.40	2.40	2	.....	26	12	3	1	1	1
175.....	3.09	3.25	3.00	3	5	26.1	12	6	4	4	4
176.....	4.10	4.50	3.90	2	1	15.3	8	30	1	2	3
Total and average..	\$2.74	\$3.13	\$2.40	31	18	21.1	13.6	8.1	20	29	8

SPECIAL INSPECTION—TABLE I.—Continued.

Running number.	PUBLIC SCHOOLS.					PAROCHIAL SCHOOLS.					BOTH SCHOOLS.				
	Number attending.	Years.		Average or above.	Below average.	Number attending.	Years.		Average or above.	Below average.	Number attending.	Years.			
		Average.	Highest.				Lowest.	Average.				Highest.	Lowest.	Average or above.	Below average.	Av. in public.	Av. in parochial.
158.....	8	6.5	9	4	4	4	32	5.7	9	1	20	12	6	2.6	5.1
159.....	2	7.5	8	7	1	1	5	5.2	6	4	3	2	.....	.....	.....
160.....	4	6.2	8	4	2	2	12	4.5	7	1	6	6	3	2	3
161.....	8	6	9	1	5	3	1	6	6	6	1	.....	2	3.5	4
162.....	2	5.5	6	5	1	1	1	8	8	8	1	.....	1	5	4
163.....	5	7	9	5	3	2	5	6.5	8	5	2	3	3	3	3.5
Total and average..	29	6.4	8.1	4.3	16	13	56	5.9	7.3	4.1	33	23	15	3.2	3.9

TRUNKS AND VALISES.

158.....	8	6.5	9	4	4	4	32	5.7	9	1	20	12	6	2.6	5.1
159.....	2	7.5	8	7	1	1	5	5.2	6	4	3	2	.....	.....	.....
160.....	4	6.2	8	4	2	2	12	4.5	7	1	6	6	3	2	3
161.....	8	6	9	1	5	3	1	6	6	6	1	.....	2	3.5	4
162.....	2	5.5	6	5	1	1	1	8	8	8	1	.....	1	5	4
163.....	5	7	9	5	3	2	5	6.5	8	5	2	3	3	3	3.5
Total and average..	29	6.4	8.1	4.3	16	13	56	5.9	7.3	4.1	33	23	15	3.2	3.9

WAGONS, CARRIAGES AND SLEIGHS.

164.....	1	9	9	9	1	.....	1	6	6	6	1	.....	1	4	3
165.....	2	6.5	7	6	1	1	2	4.5	5	4	1	1	.....	.....	.....
166.....	.....	.....	.....	.....	.....	.....	1	8	8	8	1	.....	2	2.5	4.5
167.....	1	5	5	5	1	.....	.....	.....	.....	.....	.....	.....	1	4	4
168.....	.....	.....	.....	.....	.....	.....	2	7	7	7	2	.....	1	1	7
169.....	8	7.5	9	6	3	5	2	3	5	1	1	1	.....	.....	.....
170.....	2	6	8	4	1	1	1	5	5	5	1	.....	.....	.....	.....
Total and average	14	6.8	7.6	6	7	7	9	5.6	6	5.1	7	2	5	2.5	5.1

WOOLEN AND WORSTED GOODS.

171.....	7	5.5	8	1	4	3	20	4.6	9	6	11	9	.....	.....	.....
172.....	1	9	9	9	1	.....	5	7	8	3	4	1	.....	.....	.....
173.....	1	7	7	7	1	.....	1	6	6	6	1	.....	1	4	4
174.....	.....	.....	.....	.....	.....	.....	2	8.5	9	8	1	1	.....	.....	.....
175.....	2	7	8	6	1	1	3	7	8	6	1	2	3	4.6	2.6
176.....	.....	.....	.....	.....	.....	.....	1	6	6	6	1	.....	2	3	4.6
Total and average	11	7.1	8	5.7	7	4	32	6.5	7.6	4.8	19	13	6	3.8	3.7

SPECIAL INSPECTION—TABLE I.—Continued.

Running number.	WHERE BORN.			WITH WHOM LIVING.			OCCUPAT'N OF FATHER.		No. who said father was working.	No. who said parents own home.	RENT.	
	Wisconsin.	Other states.	Germany.	With one or both parents	Other relatives.	Boarding.	Labor.	Trade.			No. paying.	Average rent

TRUNKS AND VALISES.

158.....	30	1	15	44	2	25	21	.....	.....	3	\$5.00
159.....	2	1	4	7	.....	4	3	1	3	1	3.50
160.....	10	.....	9	18	1	9	10	.....	.....	.....	.....
161.....	5	1	5	11	.....	6	5	.....	.....	.....	.....
162.....	4	.....	.....	4	.....	2	2	.....	.....	.....	.....
163.....	13	.....	.....	13	.....	7	6	.....	.....	.....	.....
Total and average..	64	3	33	97	3	53	47	1	3	4	\$4.25

WAGONS, CARRIAGES AND SLEIGHS.

164.....	3	.....	.....	3	.....	.....	3	.....	1	.....	.....
165.....	2	.....	2	4	.....	3	1	.....	.....	.....	.....
166.....	3	.....	.....	3	.....	1	2	.....	.....	.....	.....
167.....	2	.....	.....	2	.....	1	1	.....	.....	.....	.....
168.....	3	.....	.....	3	.....	1	2	.....	.....	.....	.....
169.....	4	.....	6	10	.....	8	2	.....	.....	.....	.....
170.....	1	.....	2	3	.....	2	1	.....	.....	.....	.....
Total and average..	18	.....	10	28	.....	16	12	.....	1	.....	.....

WOOLEN AND WORSTED GOODS.

171.....	18	1	8	26	1	20	7	15	13	5	\$5.50
172.....	6	.....	.....	6	.....	6	.....	6	6	.....	.....
173.....	2	.....	1	3	.....	3	.....	.....	.....	.....	.....
174.....	2	.....	.....	2	.....	1	1	.....	.....	.....	.....
175.....	8	.....	.....	8	.....	2	6	.....	.....	.....	.....
176.....	1	1	1	3	.....	1	2	.....	.....	.....	.....
Total and average..	37	2	10	48	1	33	16	21	19	5	\$5.50

SPECIAL INSPECTION—TABLE I.—Continued.

Running number.	Total wage earners.		WAGE EARNERS 16 OR UNDER.							Average hours of labor daily.
	Total 16 years or under.	Male.	Female.	Years.		Under average age.	Under 14 years of age.			
				Average age.	Average age or above.					
177.....	16	5	5	.....	15.5	3	2	1	10
178.....	525	54	53	1	15.2	27	27	2	10	
179.....	15	3	3	.....	15.4	2	1	.....	10
180.....	225	8	6	2	15.1	5	3	1	10	
181.....	110	3	3	.....	15.1	2	1	.....	10
182.....	375	4	4	.....	14.7	2	2	.....	10
183.....	55	7	7	.....	14.5	5	2	2	7
184.....	70	6	6	.....	14.4	4	2	2	10
185.....	211	21	12	9	15.4	9	12	.....	10
186.....	125	5	5	.....	16.6	4	1	.....	10
187.....	80	4	3	1	14.8	2	2	.....	10
188.....	250	21	12	9	15.5	11	10	.....	10
189.....	80	10	4	6	14.5	4	6	.....	10
190.....	100	11	.....	11	14.7	9	2	.....	9
191.....	53	3	2	1	15.3	1	2	.....	10
192.....	27	2	2	.....	15.2	1	1	.....	10
193.....	12	3	.....	3	14.9	1	2	.....	9
194.....	305	31	.....	31	14.7	19	12	.....	10
195.....	50	16	16	.....	15.2	10	6	.....	10
196.....	60	2	2	.....	14.9	1	1	.....	10
197.....	38	23	.....	23	15.2	12	11	.....	10
198.....	90	14	3	11	15.8	10	4	.....	10
199.....	15	2	2	.....	14.4	1	1	.....	10
200.....	60	5	1	4	15.1	4	1	.....	10
201.....	54	9	1	8	14.8	8	1	1	10	
202.....	61	3	3	.....	14.7	2	1	.....	10
203.....	29	4	.....	4	14.9	3	1	.....	10
204.....	90	11	.....	11	15.3	7	4	.....	10
205.....	350	14	.....	14	15.3	8	6	.....	9
206.....	300	20	2	18	15.1	9	11	.....	10
207.....	160	37	29	8	15.5	23	14	.....	10
208.....	197	19	19	.....	15	13	6	2	10
209.....	32	3	3	.....	14	2	1	1	10
210.....	60	9	9	.....	14.5	6	3	2	10
211.....	82	7	7	.....	14.7	4	3	1	10
212.....	1,100	58	58	.....	14.6	36	22	9	10
213.....	10	3	3	.....	13.7	2	1	3	10
214.....	25	3	3	.....	15.3	1	2	.....	10
215.....	217	38	3	35	14.9	22	16	4	10	
Total and average.....	5,714	501	291	210	14.9	295	206	31	9.8	

SPECIAL INSPECTION—TABLE I.—Continued.

Running number.	WAGES.					TIME IN PRESENT EMPLOY.					No. having had previous employers.
	Weekly.			Average or above.	Less than average.	Wks.	Mos.	Days	Average or above.	Under average.	
	Average wages.	Highest wages.	Lowest.			Average.	Highest.	Lowest.			
177.....	\$2.80	\$3.50	\$1.50	4	1	8.2	6	2	2	3	2
178.....	2.88	5.00	1.87	21	33	27.7	30	12	17	37	20
179.....	3.00	3.00	3.00	3	.....	36.6	24	12	1	2	1
180.....	2.51	2.70	2.10	5	3	48.3	15	36	3	5	2
181.....	3.17	3.50	3.00	1	2	9	6	3	1	2	2
182.....	2.00	2.00	2.00	4	.....	13.2	6	12	2	2	.....
183.....	3.53	4.00	3.12	3	4	14.9	12	12	2	5	2
184.....	2.29	2.50	2.00	2	4	14.5	4	12	2	4	.....
185.....	2.42	4.00	2.00	12	9	29.2	36	12	5	16	6
186.....	3.60	4.00	3.00	2	3	58	24	6	2	3	1
187.....	3.25	4.00	3.00	1	3	4	1½	6	1	3	.....
188.....	2.77	3.00	2.10	13	8	39.7	24	6	10	11	5
189.....	4.20	4.20	4.20	10	.....	4.3	1	30	10	.....	.....
190.....	2.30	3.25	1.50	4	7	44.9	18	9	6	5	7
191.....	2.00	2.00	2.00	3	.....	12	3	60	2	1	.....
192.....	3.00	3.00	3.00	2	.....	15.5	7	6	1	1	1
193.....	2.55	3.00	2.30	1	2	14.3	4	60	2	1	.....
194.....	2.22	3.75	1.50	15	16	17.5	18	3	10	21	3
195.....	3.42	5.00	1.70	6	10	15.3	24	1	3	13	6
196.....	3.00	3.00	3.00	2	.....	31	12	60	1	1	.....
197.....	3.03	3.75	2.25	9	14	29.1	24	1	12	11	1
198.....	2.25	3.50	1.75	8	6	47.4	36	10	5	9	.....
199.....	2.00	2.00	2.00	2	.....	2.5	1	6	1	1	.....
200.....	2.20	2.50	2.00	2	3	22.6	12	78	2	3	3
201.....	3.77	4.15	2.75	1	8	18.8	8	6	3	6	2
202.....	3.16	3.50	2.50	2	1	16	8	2	1	2	1
203.....	2.81	3.25	2.50	2	2	27.2	12	12	2	2	.....
204.....	2.76	3.25	2.35	2	9	15.2	5	18	7	4	.....
205.....	3.62	6.50	2.10	3	11	26	12	60	8	6	2
206.....	2.14	4.75	2.00	11	9	15.2	28	2	5	15	5
207.....	2.40	4.00	1.50	17	20	49.7	36	1	15	22	10
208.....	2.35	2.70	1.80	8	11	28.2	12	5	11	8	7
209.....	1.70	2.10	1.50	1	2	4.2	1½	6	2	1	1
210.....	2.93	3.60	2.40	7	2	15	12	4	2	7	1
211.....	2.65	3.00	2.40	3	4	8.9	4	30	2	5	3
212.....	2.87	4.50	2.10	25	33	36.5	36	1	22	36	1
213.....	1.50	1.50	1.50	3	.....	2	½	1	3	.....	.....
214.....	2.53	3.00	2.10	1	2	4.2	1½	6	2	1	1
215.....	2.62	4.00	1.00	20	18	28.3	24	24	16	22	9
Total and average..	\$2.72	\$3.43	\$2.21	241	260	21.9	14.3	16.1	204	297	105

SPECIAL INSPECTION—TABLE I.—Continued.

Running number.	PUBLIC SCHOOLS.					PAROCHIAL SCHOOLS.					BOTH SCHOOLS.				
	Number attending.	Years.			Average or above. Below average.	Number attending.	Years.			Average or above. Below average.	Number attending.	Years.			
		Average.	Highest.	Lowest.			Average.	Highest.	Lowest.			Av. in public.	Av. in parochial.		
177.....	1	7	7	7	1	3	5.6	7	5	1	2	1	3	3	
178.....	21	6.5	9	4	12	32	5.5	8	2	17	15	1	4	4	
179.....	2	6	6	6	2							1	3	3	
180.....						7	6.7	8	5	5	2	1	4	4	
181.....	1	8	8	8	1	2	7.5	8	7	1	1				
182.....	3	8.3	10	7	1	2	1	6	6	6	1				
183.....	5	5.6	6	4	4	1	1	6	6	6	1		1	4	
184.....	4	7.7	9	7	2	2	8	8.5	9	8	1	1			
185.....	7	7.1	9	6	3	4	14	5	8	3	11	3			
186.....	4	7.7	8	7	3	1	1	7	7	7	1	3			
187.....	3	8	8	8	2	1	1	7	7	7	1				
188.....	11	6.2	8	5	4	7	6	6	7	5	5	3	2	1.5	
189.....	10	7.8	9	6	6	4									
190.....	3	6	7	5	2	1	8	6.8	8	6	6	2			
191.....	3	7	8	5	2	1									
192.....							2	8	8	8	2				
193.....	1	7	7	7	1		2	6	6	6	2				
194.....	1	5	5	5	1		30	2.5	6	1	15	15			
195.....	5	7.4	8	5	3	2	10	5.6	8	3	6	4	1	4	
196.....	1	6	6	6	1		1	6	6	6	1				
197.....	3	6.6	8	5	2	1	20	5.9	9	5	13	7			
198.....	9	7.2	9	4	5	4	5	7.2	8	6	2	3			
199.....	1	7	7	7	1		1	6	6	6	1				
200.....	5	7.4	9	6	2	3									
201.....	6	6.3	8	3	4	2	3	5.3	6	5	1	2			
202.....							3	7	7	7	3				
203.....	1	5	5	5	1		3	4	5	3	2	1			
204.....	5	5.6	10	1/4	4	1	6	6.8	8	3	5	1			
205.....	3	7	8	6	2	1	9	6.1	8	5	4	5	2	3.5	
206.....	9	7	9	6	5	4	10	5.8	8	4	5	5	1	5	
207.....	12	6.5	9	2	8	4	25	5.5	9	1.6	11	14			
208.....	6	7.5	9	5	4	2	3	6.9	8	4	6	2	5	4.6	
209.....							3	6.6	8	5	2	1			
210.....	4	7.5	9	7	3	1							5	5	
211.....	4	7.5	8	7	2	2							3	3	
212.....	8	6.6	8	5	4	4	37	6.1	9	2	18	19	13	2.7	
213.....	3	6	6	6	3										
214.....	2	8	9	7	1	1							1	1	
215.....	3	7.3	8	6	2	1	28	6.5	8	5	15	13	7	3	
Total and average..	170	6.8	7.9	5.6	104	66	286	6.2	7.4	4.9	165	121	45	3.4	3.6

SPECIAL INSPECTION—TABLE I.—Continued.

Running number.	WHERE BORN.			WITH WHOM LIVING.			OCCUPAT'N OF FATHER.		No. who said father was working.	No. who said parents own home.	RENT.	
	Wisconsin.	Other states.	Germany.	With one or both parents	Other relatives.	Boarding.	Labor.	Trade.			No. paying.	Average rent
177.....	3	1	1	5			5					
178.....	42	4	8	53		1	47	7	15	17	4	\$5.50
179.....	3			3			2	1		1	1	4.00
180.....	8			8			4	4				
181.....	2	1		3				3				
182.....	3	1		4			4		3	3	1	7.00
183.....	6	1		7			7			2	2	4.00
184.....	4	2		6			5	1	4	4	1	4.00
185.....	16	5		21			16	5	18	17	2	4.25
186.....	4	1		5			1	4	4	5		
187.....	2	2		4			3	1				
188.....	18		3	21			6	15				
189.....	10			10			5	5				
190.....	10		1	11			9	2				
191.....	3			3			2	1				
192.....	2			2			2					
193.....	2	1		3			1	2				
194.....	18	1	12	31			26	5		2	2	3.12
195.....	11	1	4	15	1		14	2	8	10	2	10.50
196.....	2			2			2					
197.....	12	6	5	23			8	15	10	8	11	3.20
198.....	11	1	2	14			12	2	10	12		
199.....	2			2			2			1	1	7.00
200.....	4		1	5			2	3	3	3		
201.....	9			9			8	1		4	1	9.00
202.....	3			3			2	1				
203.....	4			4			2	2	3	3	1	10.00
204.....	10		1	11			8	3		5		
205.....	12		2	14			12	2	11	9		
206.....	18		2	20			19	1		7	8	6.87
207.....	30		7	37			30	7	17	23		
208.....	19			19			14	5				
209.....	3			3			3			2		
210.....	8		1	9			7	2				
211.....	6		1	7			7					
212.....	42		16	56	2		50	8				
213.....	1		2	3			3					
214.....	2		1	3			1	2				
215.....	38			38			28	10				
Total and average..	403	28	70	497	3	1	379	122	106	140	37	\$6.03

TABLE II.—CLASSIFICATION AS TO INDUSTRIES.

Running number.	Running number.	Total wage earners.	WAGE EARNERS 16 OR UNDER.						
			Total 16 years or under.	Male.	Female.	Years.			Average hours of labor daily.
						Average age.	Av. age or above.	Under average age.	
1.....	Agricultural implements	1,213	23	23	....	14.7	13	10	110
2.....	Bicycles	821	49	49	....	14.5	25	24	610
3.....	Boots and shoes.....	1,098	97	58	39	14.9	57	40	7 9.6
4.....	Boxes, wooden and paper.....	1,014	171	100	71	15.1	93	78	710
5.....	Brick	232	17	17	....	14.9	10	7	410
6.....	Brooms, brushes and baskets.....	97	18	18	....	14.3	11	7	3 9.2
7.....	Chairs	2,969	202	146	56	15.2	117	85	16 9.9
8.....	Cigars and tobacco.....	441	48	35	13	14.8	33	15	3 9.4
9.....	Clothing	606	47	10	37	15.3	28	19	.... 9.7
10.....	Confectionery, crackers, etc.....	744	152	38	114	15	86	66	510
11.....	Cotton and linen goods.....	512	35	21	14	14.8	20	15	411
12.....	Furniture	1,655	116	316	....	14.9	70	46	3 9.9
13.....	Iron goods, malleable.....	2,302	180	178	2	14.9	95	85	8 9.9
14.....	Knit goods	2,063	502	76	426	14.8	232	270	1210
15.....	Lager beer, bottling.....	2,509	135	64	71	15.2	90	45	.... 9.9
16.....	Lithographing	303	39	39	....	15.1	23	16	1 9.8
17.....	Lumber, lath and shingles.....	734	100	100	....	15.5	38	62	1610
18.....	Mixed textiles	377	154	64	90	15.1	82	72	810
19.....	Office and saloon furniture.....	515	25	25	....	14.9	14	11	310
20.....	Sash, doors, blinds and moulding.....	2,787	229	219	10	15.1	126	103	10 9.4
21.....	Sheet metal goods.....	1,732	343	268	75	15	187	156	410
22.....	Trunks and valises.....	1,085	100	81	19	15.1	50	50	1 9.6
23.....	Wagons, carriages and sleighs.....	1,685	28	28	....	15	14	14	110
24.....	Woolen and worsted goods.....	597	49	12	37	15.1	27	22	110
25.....	Miscellaneous	5,714	501	291	210	14.9	295	206	31 9.8
Total and average.....		33,805	3360	2076	1284	14.9	1336	1524	155 9.9

TABLE II.—CLASSIFICATION AS TO INDUSTRIES.—Continued.

Running number.	WAGES.					TIME IN PRESENT EMPLOY.					No. having had previous employ.
	Weekly.			Average or above.	Less than average.	Wks. Average.	Mos. Highest.	Days Lowest	Average or above.	Under average.	
	Average wages.	Highest wages.	Lowest.								
1.....	\$3.50	\$4.22	\$2.92	10	13	22.5	14.7	17	8	15	10
2.....	3.22	4.00	2.84	22	27	13.9	11.4	11.1	16	33	25
3.....	2.26	3.00	1.76	35	62	37.7	24.2	52.8	35	62	32
4.....	2.71	2.40	2.30	76	95	17.7	11.1	19.3	66	105	47
5.....	2.86	3.25	2.78	7	10	9.4	3.8	18	7	10	7
6.....	2.46	2.81	2.09	11	7	18.5	7.5	10	8	10	5
7.....	2.35	3.07	1.90	97	105	26.1	18.2	3.7	76	126	55
8.....	2.53	3.19	2.19	23	25	23.6	11.8	27.3	22	26	14
9.....	2.41	2.96	2.01	18	29	20.5	12.8	28.5	19	28	4
10.....	1.96	2.68	1.64	59	93	25.6	17.6	4.8	62	90	25
11.....	3.07	3.88	3.30	20	15	24.4	16.3	8.6	14	21	2
12.....	2.77	3.40	2.37	35	81	21.7	14.2	25.8	46	70	33
13.....	2.94	3.94	2.41	69	111	19.8	15	11.1	60	120	86
14.....	2.38	4.31	1.68	208	294	27.2	23	12.7	167	335	105
15.....	3.00	3.73	2.66	45	90	21.1	13.6	10.3	57	78	48
16.....	2.57	3.30	1.97	17	22	38.4	26.2	13.6	16	23	12
17.....	3.31	4.02	2.82	60	40	19.6	12.8	6.6	33	67	4
18.....	2.39	3.54	1.81	73	81	27.8	21.1	8.2	40	114	31
19.....	2.75	3.39	2.34	9	16	29.1	17	29.2	10	15	17
20.....	2.39	3.14	2.02	106	123	22.7	20	15.7	83	146	89
21.....	2.41	3.07	2.03	143	200	22.6	16.7	3.5	134	209	122
22.....	2.53	3.51	1.94	37	63	28.9	24	15.5	45	55	28
23.....	3.06	3.43	2.74	14	14	14.3	6.5	21.1	12	16	20
24.....	2.74	3.13	2.40	31	18	21.1	13.6	8.1	20	29	8
25.....	2.72	3.43	2.21	241	260	21.9	14.3	16.1	204	297	105
Total and average..	\$2.69	\$3.38	\$2.28	1,466	1,894	23	15.5	15.9	1,260	2,100	934

TABLE II.—CLASSIFICATION AS TO INDUSTRIES.—Continued.

Running number.	PUBLIC SCHOOLS.						PAROCHIAL SCHOOLS.						BOTH SCHOOLS.		
	Number attending.	Years.			Average or above.	Below average.	Number attending.	Years.			Average or above.	Below average.	Number attending.	Years.	
		Average.	Highest.	Lowest.				Average.	Highest.	Lowest.				Av. in public.	Av. in parochial.
1.....	11	6.1	7.7	5	6	5	10	6.3	7	5.3	7	3	2	4	2.5
2.....	27	5.8	7.7	5.8	12	15	14	6.2	6.5	5.8	10	4	8	2.9	4.7
3.....	41	6.2	8.3	4.6	18	23	48	6.2	7.5	5	32	16	8	3.7	4.4
4.....	67	5.9	8.5	5.7	39	28	60	6.6	7.6	5.7	35	25	44	3.2	3.5
5.....	9	6.7	8	5.3	5	4	8	5.2	5.5	5	7	1	.....	.....	.....
6.....	11	6.6	7.2	6.5	6	5	4	4.5	5	4	2	2	3	3.5	2.7
7.....	63	6.9	8.2	5	32	31	91	6.6	7.8	4.6	44	47	44	3.6	3.7
8.....	11	6.8	7.2	6.4	8	3	26	6.1	6.8	5.4	15	11	11	2.9	3.2
9.....	25	7.3	8.2	6.4	17	8	16	6.8	7.8	5.6	9	7	6	3.8	3.4
10.....	60	7	8.2	5.5	35	25	83	6	8	3.7	51	32	9	3.6	3.7
11.....	3	4.5	5.5	3.5	2	1	23	5.8	7	5	15	8	9	2.5	4.1
12.....	49	6.8	7.6	6	30	19	45	6	7.1	5	24	21	22	3.2	3.8
13.....	49	6.6	7.7	5.5	27	22	112	5.6	6.9	4	61	51	19	4.5	3.1
14.....	106	6.8	8.6	4.4	57	49	352	6.4	8.3	4.3	192	160	44	2.8	3.8
15.....	42	6.6	7.6	5	30	12	89	5.6	7.6	3.8	45	44	4	2.7	4.3
16.....	22	7.5	8	6.2	11	11	17	6.9	8	6	8	9	.....	.....	.....
17.....	56	6.7	8	5	39	17	13	6.9	8	6.6	9	4	29	3.8	3.1
18.....	27	7.5	9	5.2	13	14	125	6.5	8.5	4	62	63	2	3	3.5
19.....	11	6.1	6.8	5.5	7	4	11	6.7	7.4	6.2	6	5	2	2.5	4
20.....	55	6.8	8.2	5.6	32	20	143	6.2	7.6	4.6	72	71	29	3.6	3.3
21.....	65	5.7	7.1	3.7	40	25	260	5.5	7.8	3	148	112	18	3.5	3.7
22.....	29	6.4	8.1	4.3	16	13	56	5.6	7.3	4.1	33	23	15	3.2	8.9
23.....	14	6.8	7.6	6	7	7	9	5.6	6	5.1	7	2	5	2.5	5.1
24.....	11	7.1	8	5.7	7	4	32	6.5	7.6	4.8	19	13	6	3.8	3.7
25.....	170	6.8	7.9	5.6	104	66	286	6.2	7.4	4.9	165	121	45	3.4	3.6
Total and average..	1034	6.5	7.8	5.3	600	434	1933	6.1	7.3	4.8	1078	855	384	3.	3.3

TABLE II.—CLASSIFICATION AS TO INDUSTRIES.—Continued.

Running number.	WHERE BORN.			WITH WHOM LIVING.			OCCUPAT'N OF FATHER.		No. who said father was working.	No. who said parents own home.	RENT.	
	Wisconsin.	Other states.	Germany.	With one or both parents	Other relatives.	Boarding.	Labor.	Trade			No. paying.	Average rent
1.	22		1	23			13	10		12	2	\$5.75
2.	31	5	13	46	3		33	16	7	12	3	6.33
3.	74	10	13	96	1		61	36	27	27	14	6.79
4.	126	7	38	168	3		132	39	39	44	6	4.74
5.	13		4	16	1		12	5	2	13	2	3.50
6.	14	2	2	18			12	6	2	5	2	7.75
7.	187	2	13	199	2	1	125	77	41	38	2	9.75
8.	47		1	48			43	5		11	1	5.00
9.	36	4	7	46	1		22	25	17	16	8	5.85
10.	119	13	20	150	2		104	48	79	66	34	5.77
11.	26		9	35			26	9		2		
12.	105	5	6	113	2	1	72	44				
13.	136	6	38	177	3		130	50	28	76	17	4.00
14.	348	27	127	495	4		398	104	9	22	4	5.87
15.	95	5	35	135			120	15	34	91	24	5.02
16.	30	6	3	39			28	11	13	20	9	6.61
17.	76	10	14	99	1		69	31	2	2	1	7.00
18.	110	5	39	151	3		130	24	34	42	1	3.50
19.	16	2	7	25			16	9	4	3	3	6.37
20.	186	5	38	226	3		182	47	30	59	31	6.40
21.	299	3	41	338	4	1	257	86	14	45	2	3.50
22.	64	3	33	97	2		53	47	1	3	4	4.25
23.	18		10	28			16	12		1		
24.	37	2	10	48	1		33	16	21	19	5	5.50
25.	403	28	70	497	3	1	379	122	106	140	37	6.03
Total and average..	2,618	150	592	3,313	43	4	2,466	894	510	769	212	5.69

ANALYSIS.

The facts presented in the two foregoing tables have been compiled and computed from the reports of 3,360 children, sixteen years of age or under, and employed in 215 establishments in the different manufacturing centers in this state. These 215 establishments employed in all 33,805 wage-workers and are classified into twenty-five industries.

As already explained this investigation was made the subject of a special inspection, and, while important in other respects, was made mainly for the purpose of enabling us to more completely enforce the laws which regulate the labor of children under fourteen years of age.

The data thus collected and presented needs further analysis. For this purpose the leading facts were again taken up and, together with a few explanations, presented in such way as to make their meaning and relative importance clearer.

Persons employed: In the following table we find the number of classified industries and the number of establishments included in each; also the total number of wage-earners employed, the total for each industry, and the proportion of wage-earners sixteen years of age or under.

PROPORTION 16 YEARS OF AGE OR UNDER.

	No. of establishments included.	WAGE EARNERS.		Percentage 16 years or under.
		Total No. employed.	Total 16 yrs. of age or under.	
Agricultural implements	5	1,213	23	1.89
Bicycles	7	821	49	5.96
Boots and shoes	7	1,098	97	8.83
Boxes (wooden and paper).....	12	1,014	171	16.86
Brick	4	232	17	7.32
Brooms, brushes and baskets.....	4	97	18	18.57
Chairs	11	2,969	202	6.80
Cigars and tobacco.....	9	441	48	10.88
Clothing	6	606	47	7.75
Confectionery, crackers, etc.....	9	744	152	20.44

PROPORTION 16 YEARS OF AGE OR UNDER—Continued.

	No. of establishments included.	WAGE EARNERS.		Percentage 16 years or under.
		Total No. employed	Total 16 yrs. of age or under.	
Cotton and linen goods.....	3	512	35	6.83
Furniture	12	1,655	116	7.01
Iron goods (malleable)	12	2,302	180	7.82
Knit goods	10	2,063	502	24.33
Lager beer (bottling).....	7	2,509	135	5.38
Lithographing	5	303	39	12.87
Lumber, lath and shingles.....	5	734	100	13.62
Mixed textiles	4	377	154	40.85
Office and saloon fixtures.....	5	515	25	4.85
Sash, doors, blinds, and moulding.....	13	2,787	229	8.21
Sheet metal goods.....	7	1,732	343	19.80
Trunks and valises.....	6	1,085	100	9.21
Wagons, carriages and sleighs.....	7	1,685	28	1.66
Woolen and worsted goods.....	6	597	49	8.21
Miscellaneous	39	5,714	501	8.76
Total	215	33,805	3,360	9.90

The above table shows that 215 establishments classified into 25 industries are included in this investigation. These places or industries were picked out for this inspection mainly because they are the ones in this state in which children are mostly employed to any great extent, and in which complaints of such labor are heard.

The number of persons employed in these places was 33,805. Excluding brick, cigars and lumber, which are perhaps inadequately represented, the number of wage-earners is reduced to 32,398. At the general inspection in 1897, in which practically all the plants in the state were included, the total number of hands employed in these industries was 44,156. A comparison of these two items will show that this investigation includes about 75 per cent. of the productive capacity of the industries covered. For the results arrived at, it may therefore safely be claimed, that they are fairly representative of actual condition in the state.

In these 215 factories 3,360 children, sixteen years of age or under, were employed. As the total number of wage-earners in these plants was 33,805, the number of children under this age

constituted practically 10 per cent. of the total. The percentage of children varied greatly as between the different industries. Thus, in some industries it was very high, in others, low. Mixed textiles, for instance, show that almost 41 per cent. of their operatives were 16 years of age or under. This is the highest of those included. Next in order comes knit goods with more than 24 per cent; confectionery, etc., with nearly 21 per cent.; sheet metal or tinware with about 20 per cent.; brooms, brushes and baskets with nearly 19 per cent. In four other industries the percentage exceeded 10 per cent., while in sixteen industries it was less than 10 per cent. The lowest was found in agricultural implements and wagons, carriages and sleighs, where it was below 2 per cent.

The term "Miscellaneous" as used in the foregoing table means industries not classified. Many establishments were inspected of which only from one to three could properly have been classified under the same industry. Separate classification in these cases would, perhaps, have led to undue publicity. In order to avoid this it was thought best, instead of the usual classification, to treat all these industries as one or under some one designation. Under miscellaneous, therefore, are included several separate industries. As the figures indicate, the establishments in these, also employed a large number of persons. On the whole, however, they are not largely represented in this state. The places inspected constituted in many cases the entire number. While their inspection was important any further classification was not so regarded.

In the following table the children included are classified as to sex:

PERCENTAGE OF MALES AND FEMALES; OF CHILDREN 16 YEARS OF AGE OR UNDER.

Industries.	No establishments.	Total under 16 years employed.	Males under 16 years of age.	Females under 16 years of age.	Percentage of male.	Percentage of female.
Agricultural implements	5	23	23	.....	100.	.....
Bicycles	7	49	49	.....	100.	.....
Boots and shoes.....	7	97	58	39	59.80	40.20
Boxes, wooden and paper.....	12	171	100	71	58.48	41.52
Brick	4	17	17	.....	100.	.....
Brooms, brushes and baskets.....	4	18	18	.....	100.	.....
Chairs	11	202	146	56	72.28	27.72
Cigars and tobacco.....	9	48	35	13	72.92	27.08
Clothing	6	47	10	37	21.28	78.72
Confectionery, crackers, etc.....	9	152	38	114	25.	75.
Cotton and linen goods.....	3	35	21	14	60.	40.
Furniture	12	116	116	.....	100.	.....
Iron goods (malleable)	12	180	178	2	98.89	1.11
Knit goods	10	502	76	426	15.14	84.86
Lager beer (bottling).....	7	135	64	71	47.41	52.59
Lithographing	5	39	39	.....	100.	.....
Lumber, lath and shingles.....	5	100	100	.....	100.	.....
Mixed textiles	4	154	64	90	41.56	58.44
Office and saloon fixtures.....	5	25	25	.....	100.	.....
Sash, doors, blinds and moulding.....	13	229	219	10	95.63	4.37
Sheet metal goods.....	7	343	268	75	78.13	21.87
Trunks	6	100	81	19	81.	19.
Wagons, carriages and sleighs.....	7	28	28	.....	100.	.....
Woolen and worsted goods.....	6	49	12	37	24.49	75.51
Miscellaneous	39	501	291	210	58.08	41.92
Total	215	3,360	2,076	1,284	61.79	38.21

We see from the above table that of the 3,360 children employed, 2,076, or 61.79 per cent. were boys, and 1,284, or 38.21 per cent. were girls. The boys were to a greater or less extent employed in all the industries, but in the following no girls were found: Agricultural implements, bicycles, brick, brooms, etc., furniture, lithographing, lumber, etc., office fixtures, wagons, carriages, etc.

In the industries where both were employed the following employed more boys than girls: Boots and shoes, boxes, chairs, cigars and tobacco, cotton and linen goods, iron goods, sash, doors and blinds, sheet metal goods, trunks, etc., miscellaneous.

The following employed more girls than boys: Clothing, confectionery, knit goods, bottling departments beer, mixed textiles, woolen and worsted goods.

Going back to table II we find that the average age of the children included is 14.9 years. As these figures are given for each industry it may also be seen in which ones among them the

highest and lowest average age was found. The highest average age was 15.5 and this is shown for lumber, etc. The lowest, or 14.3 years was found in brooms, brushes and baskets.

In this connection this table also reveals a few other interesting facts. Thus we find that 1,836, or 55 per cent. of the children were of average age or above, while 1,524, or 45 per cent. were under the average age. This means that, of the children sixteen years of age or under employed in the different manufacturing industries in question, 45 per cent. were under 14.9 years of age.

There is another column under the age statistics in table II which will attract considerable attention, and to obtain reliable data concerning which was the main object of this investigation. This column relates to the number of children under fourteen years of age which were found at work in the different factories, etc. The figures here show that of the total number examined, 155, or 4.6 per cent. were under this age. To many this proportion will undoubtedly appear unduly large. It is also greater than it ought to be. Considering, however, what was said in the introduction to this part and also the fact that the Bureau is provided with two regular inspectors only for the whole state, it is almost surprising that the number was not greater. It can be said without qualifications, that but for the vigilance of the inspectors the number under fourteen would have been many times as great.

As this investigation was very thorough and covered practically all extensive employers of child labor in the state, and as it has been followed up with several subsequent inspections, it can be safely said here that the children under fourteen, or the legal limit, thus detected and dismissed have not been replaced by others under this age unless provided with the requisite permit to this effect. The amount of illegal child labor in this state has therefore been reduced to a minimum. In fact this investigation was the means of practically abolishing child labor in our manufacturing centers. Through it the condition in this respect was probed to the bottom. With proper vigilance in the future or from now on the state thus reached may also be maintained, especially if the inspection service is increased by a few additional and efficient factory inspectors.

Children under fourteen years of age and employed in viola-

tion of the law were discovered and discharged in all the industries covered except "clothing" and "beer bottling." These two industries are usually heavy employers of child labor and there is no exception to this rule now. At the time of this inspection, however, they were found to be complying with the law. One reason for this can probably be traced to the greater watchfulness of the inspectors to which particularly the bottling establishments have been subjected of late. For some time past and up to less than one year ago more complaints of child labor reached this Bureau from these than from any other industry. This naturally caused them to be more frequently and closely inspected than most others. The result is plain. In this, therefore, we have a splendid illustration of what may be accomplished, in the way of abolishing illegal child labor, by a sufficiently strong and efficient system of factory inspection.

The interest attached to these figures certainly warrants further comparisons. For this purpose as well as for convenience the following presentation is included:

PROPORTION OF CHILDREN UNDER 14 YEARS OF AGE.

Industries.	No. establishments.	No children 16 years of age or under.	Number under 14 years of age.	Percentage.
Agricultural implements	5	23	1	4.35
Bicycles	7	49	6	12.24
Boots and shoes.....	7	97	7	7.27
Boxes, wooden and paper.....	12	171	7	4.09
Brick	4	17	4	23.53
Brooms, brushes and baskets.....	4	18	3	16.66
Chairs	11	202	16	7.92
Cigars and tobacco.....	9	48	3	6.25
Clothing	6	47	.....	.....
Confectionery, crackers, etc.....	9	152	5	3.29
Cotton and linen mills.....	3	35	4	11.43
Furniture	12	116	3	2.59
Iron goods, malleable.....	12	180	8	4.40
Knit goods	10	502	12	2.39
Lager beer, bottling.....	7	135	.....	.....
Lithographing	5	39	1	2.57
Lumber, lath and shingles.....	5	100	16	16.00
Mixed textiles	4	154	8	5.19
Office, etc., fixtures.....	5	25	3	12.00
Sash, doors and blinds.....	13	229	10	4.37
Sheet metal goods, tinware.....	7	343	4	1.16
Trunks and valises.....	6	100	1	1.00
Wagons, carriages and sleighs.....	7	28	1	3.57
Woolen and worsted goods.....	6	49	1	2.05
Miscellaneous	39	501	31	6.18
Total	215	3,360	155	4.60

The above table shows, for each of the industries included, the number of children sixteen years of age or under; also the number or proportion of these who were under fourteen years of age. As to the children in the first group comparisons with the total number employed have been made already. Comparisons of those in the second group, or children under fourteen have also been made in a general way, but to what has thus been said, there is much to add. Examining the above table in relation to the number under fourteen, employed in the different industries, we find that, outside of the Miscellaneous which shows 31 children, chairs and lumber, etc., show the greatest number, or 16 children each. Next in order is knit goods with 12, sash, doors and blinds with 10, iron goods and mixed textiles with 8 each, and boots and shoes, and boxes, etc., with 7 children each. In the remaining industries the number varies from 6 down. The comparisons thus made relate to the actual number employed only, and not to the relation of these to the total number included.

The percentage of children under fourteen based upon the total children included is also shown. In this case bricks ranks the highest showing a proportion of 23.53 per cent. Next in order are brooms, brushes and baskets with 16.66 per cent., lumber, lath and shingles with 16 per cent. Bicycles, office fixtures, and cotton and linen mills each show about 12 per cent. Boots and shoes and chairs, show about 8 per cent. Cigars and tobacco, and Miscellaneous about 6 per cent. Mixed textiles 5.19 per cent., agricultural implements, boxes, iron goods, sash, doors and blinds slightly more than 4 per cent. each. Wagons, carriages, etc., 3.57 per cent., confectionery, etc., 3.29 per cent., furniture 2.59 per cent., knit goods 2.39 per cent., lithographing 2.57 per cent., woolen and worsted goods 2.05 per cent. Sheet metal goods, and trunks and valises, show the lowest percentage of children under fourteen years of age or only 1.16 and 1.00 per cent. respectively.

Wages: As already explained the wages received was among the information obtained from every child included. As individual returns could not be presented only the average, the maximum and minimum wages could be included. Table I shows the average, the highest and lowest wages for each establishment

included in the different industries. Table II shows the average, the average highest and the average lowest wages for each industry. The number of children receiving the average wages or more and the number receiving the average wages is shown in both tables.

The figures in the following table represent the final results as shown in the footings under the wage group in table II.

Average weekly wages, all industries.....	\$2 69
Highest average weekly wages, all industries.....	3 38
Lowest average weekly wages, all industries.....	2 28
Number receiving average wage or more.....	1,466
Number receiving less than the average wage.....	1,894

Average weekly wages: For each establishment the average wage was, of course, obtained by dividing the total amount paid by the whole number of employed. For each industry the average was obtained by dividing the total sum of the averages of the establishments included by the whole number of the establishments. The average wage in each of the different industries investigated are presented in the following table:

AVERAGE WAGES PAID CHILDREN.

Industries.	Average wages weekly.
Agricultural implements	\$3 50
Bicycles	3 22
Boots and shoes.....	2 26
Boxes, paper and wooden.....	2 71
Brick	2 86
Brooms, brushes and baskets.....	2 46
Chairs	2 35
Cigars and tobacco.....	2 53
Clothing	2 41
Confectionery, crackers, etc.....	1 96
Cotton and linen goods.....	3 07
Furniture	2 77
Iron goods, malleable.....	2 94
Knit goods.....	2 38
Lager beer, bottling.....	3 00
Lithographing	2 57
Lumber, lath and shingles.....	3 31
Mixed textiles	2 39
Office, etc., fixtures.....	2 75
Sash, doors and blinds.....	2 39
Sheet metal goods.....	2 41
Trunks and valises.....	2 53
Wagons, carriages and sleighs.....	3 06
Woolen and worsted goods.....	2 74
Miscellaneous	2 72
Average	\$2 69

From this presentation we see that the average weekly wages paid in the 25 industries represented is \$2.69. In thirteen of these the wages exceeded the average; in twelve, the wages paid was below the average. The highest average wages was paid in agricultural implements, or \$3.50 per week. Other industries in which the wages was three dollars or over per week are: Lumber, lath and shingles, bicycles, cotton and linen mills, wagons, carriages and sleighs, breweries. The lowest wage of \$1.96 per week was found in confectionery and cracker factories. Eight industries paid less than \$2.50, and nineteen less than \$3.00 per week.

The highest and lowest average weekly wages: The highest average weekly wages for all industries is \$3.38 and the lowest \$2.28. There was thus a difference between the highest and lowest wages of \$1.10. The difference between the different industries is also great. On the whole, however, the range in this case is about the same as in the column for the average wages. Thus the industries showing the highest average also show, as a rule, the highest and lowest average. As an example of this we may take agricultural implements, and confectionary and crackers. The first of these show, as was explained, the highest average wages and it also shows the highest and lowest average wages. In the last, the average wages paid, was the lowest, and in this industry the highest and lowest average wages was also below that of any other industry. The figures for the other industries show the same relative position.

The number of children in each case who received the average weekly wage or more and less than the average wage is also shown. From this group we find first, that, of the 3,360 children included, 1,466, or 43.63 per cent. received \$2.69 or more per week; and secondly, that 1,894 children, or 56.37 per cent., received less than \$2.69 per week. It thus appears that the number receiving less than the average wages is much the larger. The immediate reason for this may be found in the fact that in this case the variations in wages were much more narrow; there being a difference of only 41 cents between the lowest average and the average wage, while the difference between the highest average and the average wage is 69 cents.

Classified as to industries we find, that in four of these, the number paid above the average is the highest; that in 20 industries the number receiving less than the average wage is the highest; while in one industry, wagons, carriages and sleighs, the number is equal.

School attendance: Regarding school attendance the original tables show for the establishments and industries included, the number of children in each case attending the different schools, the average, the highest and lowest average period of years of attendance, the number of children whose attendance covered the average period or over, and the number of those whose schooling was less than the average period.

The aggregate results in these tabulations are given in the following table:

SCHOOL ATTENDANCE.

Schools.	Number attending schools.	YEARS.			Number attending average period or over.	Number attending less than average period.
		Average period of attendance.	Highest average period of attendance.	Lowest average period of attendance.		
Public schools only	1,034	6.5	7.8	5.3	600	434
Parochial schools only.....	1,933	6.1	7.3	4.8	1,078	855
Both public and parochial schools..	384	Pu. 3. Pa. 3.3	.....	.....	.....	.....

Number who had not attended any school, 9.

As to the kind of school attended this table shows that 1,034 children, or 30.77 per cent. of the aggregate investigated had attended public schools exclusively; that 1,933 children, or 57.52 per cent. had attended parochial schools exclusively; and that 384, or 11.42 per cent. had attended both of these schools.

The number of children who had not attended any school was 9. Of these 4 did not know how to write their own name to the certificate.

The average period of school attendance was 6.5 years for those who had attended public schools and 6.1 for parochial schools. The average period for the public schools was therefore four-tenths of one year longer than the period for parochial

schools. Of the children who had gone to both schools, the average period was 3 years for the public and 3.3 years, or three-tenths of a year longer, for the parochial.

The highest average period was 7.8 years for those who had attended public schools only, and 7.3 years for those who had attended parochial schools only. The difference here in favor of public schools is about one-half of one year.

The figures for the lowest period of attendance show about the same relation: For public schools the lowest average was 5.3 years; for parochial schools 4.8 years.

Of the 1,034 children who had attended the public schools only, 600, or about 58 per cent. had completed the average school period, while 434, or about 42 per cent. had attended less than the average period.

Of the 1,933 children who had gone to parochials only, 1,078, or nearly 56 per cent. had completed the average period, while 855, or about 44 per cent. had attended less than this period.

Place of birth: The final result of the data relating to the place of birth of the children included, as obtained and presented in the foregoing tables, is as follows:

Place of birth.	Num-ber.	Per-cent.
In Wisconsin	2,618	77.92
In Other States.....	150	4.46
In Germany	592	17.62
Aggregate	3,360	100.

In this classification as to their place of birth we find that 2,618 children, or 77.92 per cent., were born in Wisconsin; that 150, or 4.46 per cent., were born in other states; and 592, or 17.62 per cent., were born in Germany. Regarding the figures in the last item, or those born in Germany, it must be said that they are not strictly correct. Judging from the names and other circumstances there were good reasons for believing that many of the children who gave Germany as their place of birth were in reality born in Poland and Bohemia.

Where living: The following table shows where or with whom the children were living:

Where living.	Num-ber.	Per cent.
With one or both parents.....	3,313	98.60
With other relatives.....	43	1.28
Boarding	4	.12
Aggregate	3,360	100.

According to this, 3,313, or 98.60 per cent. of the children, were living with either one or both parents; 43, or 1.28 per cent., were living with other relatives, and 4, or .12 per cent. of the children, were boarding. It would have been interesting to know the circumstances which compelled the children to live elsewhere than with their parents. Owing to the circumstances, however, under which this data was obtained, the additional inquiries necessary for this purpose would have caused some inconvenience or required extra time, and was therefore not attempted.

Occupation of father: Inquiries as to the occupation of the father were made in every case. As the tables show the answers to these were tabulated in connection with the other data collected. To give the occupations as reported, in detail would have required more space than could be allotted for this purpose. In all cases, however, the occupation given was of such a nature as to come, broadly speaking, under one or the other of the terms "Common Labor" and "Trade." This classification was therefore adopted. As thus classified 2,466 reports, or 73.39 per cent. of the aggregate, come under the first term or "Common Labor," while 894, or 26.61 per cent., come under "Trade."

In addition to the facts required by the schedule, children which appeared very young or small, whether found to be under 14 years of age or not, were questioned concerning the conditions in their homes. The purpose of this was if possible to obtain some fact or facts that somehow might throw some additional light on the causes in operation which compelled these children to become wage-earners at so early an age. Our efforts in this respect, however, did not meet with the desired success. The reasons for this are several. In the first place the inquiries necessary were not included in the schedule and hence difficult to

carry out. Then again it was found that in order to accomplish anything, more ground would have had to be covered than the Bureau was prepared for. While thus not a success as a whole, many facts were gathered that proved interesting. Among these a few, such as those which related to whether or not the father was working and whether the family owned the house or home in which they lived deserve to be included here.

As to whether the father was working, 1,219, or 36.28 per cent. of the children, were questioned. The answers brought out the facts that in 510 cases, or 46.40 per cent. of the number questioned in this regard, the father was at work; that in 233 cases, or 21.20 per cent., the father was dead; and that in 356 cases, or 32.40 per cent., the father was not at work. The reason for such idleness was, when living, usually attributed to sickness or inability to find work.

As to the ownership of their home 1,099 children were questioned. Of these 769, or 63.08 per cent., stated that the house or property where they lived was owned by the father or by the family, and 450, or 36.92 per cent., said the family rented their home. The amount paid as rent was also inquired about and from their answers it was found that the average monthly rate was \$4.50. The most noticeable feature about the above answers is the large percentage who owned their homes.

In this part or under "Special Inspection" among other facts has been shown the aggregate persons employed and number or proportion of same who were 16 years of age or under for the various establishments included in this inspection. In the "General Inspection" is shown for the establishments included there the aggregate persons employed and number or proportion of these who were 18 years or under. The former, or the "Special Inspection," was conducted during the first half of this year 1898. This inspection embraced 215 establishments. The latter, or the "General Inspection," was begun in the early part of 1897 or just one year previous. This inspection embraced practically all factories in the state including those inspected at the special inspection. The 215 establishments referred to are therefore covered by both inspections. As the data relating to the number of persons employed in these establishments is

also alike or similar in the two cases a comparison of the results of the two inspections will be found interesting. Such a comparison is therefore presented in the following table:

COMPARISONS OF PERSONS EMPLOYED IN 215 ESTABLISHMENTS IN 1897 AND 1898.

Industries.	No of establishments	NO. OF WAGE EARNERS SPECIAL INSP., 1898.			NO. OF WAGE EARNERS GEN. INSP., 1897.		
		Aggregate date of in- spection.	Number 16 years of age or under.	Percentage 16 years of age or under.	Aggregate date of in- spection.	No. 15 years of age or under.	Percentage 15 years of age or under.
Agricultural implements	5	1,213	23	1.89	1,259	84	6.67
Bicycles	7	821	49	5.96	956	75	7.85
Boots and shoes.....	7	1,098	97	8.83	1,289	337	26.11
Boxes, wooden and paper....	12	1,014	171	16.86	1,071	301	30.00
Brick	4	232	17	7.32	206	33	11.16
Brooms, brushes and baskets	4	97	18	18.57	109	31	28.22
Chairs	11	2,969	202	6.80	2,680	444	16.56
Cigars and tobacco.....	9	441	48	10.88	490	148	30.20
Clothing	6	606	47	7.75	614	120	19.58
Confectionery, crackers, etc.	9	744	152	20.44	543	225	41.44
Cotton and linen mills.....	3	512	35	6.83	501	91	18.14
Furniture	12	1,655	116	7.01	1,618	184	11.37
Iron goods	12	2,302	180	7.82	1,533	283	18.46
Knit goods	10	2,063	502	24.33	1,895	778	41.05
Lager beer	7	2,509	135	5.38	2,481	324	13.06
Lithographing	5	303	39	12.87	331	76	23.00
Lumber, lath and shingles..	5	734	100	13.62	749	130	17.37
Mixed textiles	4	377	154	40.85	309	152	49.19
Office and saloon fixtures....	5	515	25	4.85	455	42	9.23
Sash, doors and blinds.....	13	2,787	229	8.21	2,334	414	17.70
Sheet metal goods.....	7	1,732	343	19.80	1,585	732	46.20
Trunks and valises.....	6	1,085	100	9.21	957	204	21.32
Wagons, carriages & sleighs	7	1,685	28	1.66	1,392	76	5.46
Woolen and worsted mills..	6	597	49	8.21	590	133	22.54
Miscellaneous	39	5,714	501	8.76	5,052	1,037	20.52
Aggregates and percent- ages	215	33,805	3,360	9.90	30,999	6,454	20.82

As said the above table covers 215 establishments. These establishments were inspected at both inspections and, if "Miscellaneous" is considered as one industry, it represents 25 industries.

The above table reveals some interesting facts. At the first inspection, or that of 1897, 30,999 persons were employed. At the last, or special inspection, 33,805 persons were employed by the same establishments. Comparing these aggregates we find an increase, in the latter year, in the number of persons employed

of 2,806 persons or practically 10 per cent. This increase, however, is not shared in by all industries. A study of the table will show that 15 industries only show an increase, and that 10 show a decrease. The increase in the former case, however, is considerable, amounting in all to 3,321 persons, while in the latter case the decrease foots up to 515 persons only. The changes as between the different industries are too apparent to need further explanations.

As to the number of children employed we find that of the 30,999 persons employed at the "General Inspection" in 1897, 6,454, or 20.82 per cent., were 18 years of age or under; and that of the 33,805 persons employed at time of the "Special Inspection" in 1898, or one year later, 3,360, or 9.90 per cent., were 16 years of age or under. As the age limit at the first inspection was placed at 18 and in the latter at 16 years, these figures do not indicate either an increase or a decrease in child labor. The relative proportion, however, of child labor is shown. As the establishments included are representative, the proportion shown represents the condition in this respect in our manufacturing centers for the industries covered.

STATISTICS OF MANUFACTURES.

This presentation of statistics of manufactures for this state is a deviation from any method formerly employed. In the last biennial report of this Bureau our object was to show the cost of production in the several classified industries in the state, and for that reason the result of the investigation was almost wholly expressed in percentages, for reasons then explained. In the present report we aim to show the conditions of the different industries by the totals of the several statistical inquiries for the years of 1896 and 1897, and by this method afford ample comparison between the two years along each line of inquiry.

The data for this investigation covers two years, 1896 and 1897, and was obtained from manufacturers on schedules prepared for the purpose. It is only fair to state, that manufacturers, as a rule, now see the import of the work of the Bureau and a more cheerful compliance with its requests are made. This is particularly true for the last year, as the schedules or returns were in most cases filled out complete; some, of course, would have to be written to several times before all the facts sought could be obtained.

This form of investigation is now carried on by several states in the Union, for the purpose of facilitating comparisons of conditions along industrial lines. The many and important manufacturing interests of this state demand that the investigations be as full and comprehensive as possible, that the system of investigation be continued for some time along certain lines rather than on detached or special lines, so that the results when incorporated into a report, would be of obvious value. The Bureau of the state of Massachusetts, the oldest in the country, and perhaps the best equipped of any bureau of its kind for effective work, has conducted similar investigations for many years with very satisfactory results. We have therefore

to a great extent conformed to the method of said bureau, both as to form of tables and arrangement of facts gathered, believing that the best results to the state could be obtained thereby. At the same time it is acting in harmony with the sentiments of other states, which are conducting investigations along this same line.

It is hoped that it will be found practicable to continue this feature of investigation for succeeding reports, as its value, both to the manufacturers and working men, must be apparent.

The several results shown in this report are built upon the data from identical establishments making returns both in 1896 and 1897, and permits of direct comparisons on the same basis for both years.

Establishments which made returns for the first time in 1897, and some which reported for 1896, but for some valid reason failed to report for 1897, are, of course, not included for consideration in this report.

The statistics contained herein include complete reports from 1,245 establishments, classified into 48 industries. This number is increased to 1,499 establishments, when we include those making returns as to wages, yearly earnings, number of persons employed, and time in operation, and brings the number of industries to 58.

The statistical presentations show by industries the number of private firms and corporations, the number of partners and stockholders, amount of capital invested, stock and material used, goods made and work done, the number of persons employed, total amount paid in wages and yearly earnings, proportion of business done and time in operation.

Relating to the question of private firms and corporations, it can be said that the Bureau has been very fortunate in getting quite complete answers, as only twelve establishments failed to designate. The explanation for this failure to designate is found in the fact that the manager of establishments belonging in whole or in part to foreign or non-resident owners, does not know the number of stockholders in the concern, and as a rule, he finds it difficult to obtain the information.

By the term "Capital invested" is meant here all the capital

devoted for the purposes of production, and is made up of the following principal items: Value of land, buildings, and fixtures; value of machinery, tools and implements, value of raw material at end of fiscal year of establishment, cash and credit capital, etc.

By "Stock and Materials Used" is meant all the materials used or consumed in manufacturing the product of the establishment, and includes all kinds of supplies such as fuel, boxes, barrels, light, etc.

The "Value of Goods" made or work done, or the product of the industry, embodies all the expenses incurred in producing it, leaving it in a condition ready for the consumer.

The tables containing the information gives the value of goods made or work done by industries, and when the total product or value of goods made is referred to, it is meant the product of the 1,245 establishments making returns for the years 1896 and 1897.

The number of persons employed is shown by industries, giving in separate tables the average number, the smallest and the greatest number, together with the excess of greatest over smallest number.

Employment in each separate industry of the aggregate number of males and females in each month for the two years is also shown.

The tables relating to wages are found in three parts. The first presentation gives the total amount paid in wages by industries for 1896 and 1897; the second, the average yearly earnings, which are obtained by dividing the total amount of wages by the sum representing the average number of persons employed regardless of sex or age. This being simply a pro rata division of the total amount paid in wages among the total number of employes, an increase or decrease in which does not of itself signify a corresponding change in the *rate* of daily wages paid. An increase or decrease in the average yearly earnings is more attributable to the loss of time or an increased number of low-priced help, than to anything else.

The third part relates to classified weekly wages. A table of wage rates is given, ranging from \$25.00 per week, and over,

down to \$1.50 per week or less. The employes, divided into four classes,—males and females, 18 years and over, and males and females under 18 years of age,—are entered in their respective place according to the rate of wage received.

In proportion of business done, the greatest productive capacity of the establishment with present facilities is considered 100 per cent. If an establishment turned out goods equal to three-fourths of its maximum capacity, the proportion of business done would be considered as 75 per cent., and if the output reached only one-half, the proportion would be 50 per cent. The last table relates to days in operation of each industry, and an average for All Industries.

Whenever "All Industries," or any totals represented by said term, are referred to in this report, it should be understood to mean the total number of industries or any total amount represented by said number of industries which are found at end of each table.

As the establishments furnishing the data for these totals have made returns for each of the two years, they enable a fair comparison to be made between 1896 and 1897 that could not have been obtained in any other way.

This report is divided into three parts: first, the statistical tables by industries, arranged according to the heads already referred to. The second contains a detailed industry presentation or a grouping of facts for twelve leading industries, arranged for convenience and comparison, one presentation of the twelve industries consolidated and a similar one for all industries.

The third part is an analysis or retrospect over all the tables.

PRIVATE FIRMS AND CORPORATIONS; PARTNERS AND STOCKHOLDERS:
BY INDUSTRIES.

1896.

In the following table, the number of private firms and corporations in each industry, together with the number of partners and stockholders by sex, is given:

INDUSTRIES.	Number of establishments.	NUMBER OF PARTNERS.			Number of corporations.	NUMBER OF STOCKHOLDERS.			Ag. partners and stockholders.	
		Number of private firms.	Male.	Female.		Total.	Male.	Female.		Total.
Agricultural Implements	31	7	11	11	24	170	30	200	211	
Artisans' tools and hardware specialties	10	7	14	14	3	11	11	11	25	
Bicycles, Tricycles, etc.....	7	2	3	3	5	29	1	30	33	
Boots and Shoes	24	10	18	18	14	108	7	115	133	
Boxes (wooden and paper).....	29	17	35	14	49	12	41	7	48	97
Brick, Tile and Sewer Pipes.....	23	14	24	24	9	65	16	81	105	
Brooms, Brushes and Baskets.....	19	15	17	1	18	4	16	2	18	36
Burial Cases, Caskets, Coffins etc.....	4	2	8	8	2	14	14	14	22	
¹ Cement, Lime, Plaster etc.....	12	3	4	4	8	208	20	228	232	
Chairs	13	.....	.....	.....	13	157	22	179	179
Cigars, Snuff and Tobacco.....	54	51	63	63	3	21	.....	21	84
Clothing	25	10	17	17	15	126	21	147	164	
² Confectioneries, Crackers, etc.....	12	2	4	4	7	23	3	26	30	
Cooking and Heating Apparatus.....	24	15	45	45	9	73	4	77	122	
Cooperage	21	12	16	16	9	108	2	110	126	
Cotton and Linen Goods.....	5	2	4	4	3	167	21	188	192	
Electrical and Gas Apparatus and Supp	21	8	16	16	13	88	14	102	118	
Flour and Feed.....	86	58	83	2	85	283	50	343	428	
Food Preparations	31	14	43	1	44	17	77	3	80	124
Furniture	42	11	22	22	31	370	31	401	423	
Furs, Gloves and Mittens.....	11	8	15	2	17	3	13	13	30
³ Iron Goods (Malleable).....	25	7	15	15	17	130	4	134	149	
Knit Goods	15	5	9	9	10	59	8	67	76	
Lager Beer	71	40	85	3	88	31	347	40	387	475
Leather	33	19	34	34	14	1464	267	1731	1765	
⁴ Lumber, Lath and Shingles.....	168	67	96	96	100	453	88	541	637	
Malt	20	6	13	13	14	123	11	134	147	
⁵ Machines and machinery.....	86	45	73	73	39	197	25	222	295	
Office and Saloon Fixtures, etc.....	15	11	18	18	4	293	5	298	316	
Paints, Oils and Crude Chemicals.....	7	2	3	3	5	19	.....	19	22
⁶ Paper and Pulp.....	34	4	5	5	27	180	4	184	189	
Printers' Supplies	4	.....	.....	.....	4	15	1	16	16
Saddlery, Harness, etc.....	9	5	8	8	8	4	15	15	23
Sash, Doors, Blinds, etc.....	73	44	92	92	29	161	17	178	270	
Sheet Metal Goods	26	18	28	28	8	54	5	59	87	
⁷ Ship and Boat Building.....	6	2	3	3	3	36	.....	36	39
Soap, Lye, Potash, etc.....	9	6	9	1	10	3	38	2	40	50
Staves and Heading.....	21	13	25	25	8	43	.....	43	68
Stone (Granite, Marble, etc.).....	10	7	12	12	3	25	.....	25	37
Straw Goods	5	1	1	1	4	25	2	27	28	
Toys and Games.....	5	1	2	2	4	47	1	48	50	
Trunks, Valises, etc.....	9	1	2	2	8	68	1	69	71	
Veneer .....	.....	2	3	3	7	71	4	75	78
Wagons, Carriages and Sleighs.....	53	35	91	3	94	18	256	36	292	386
Woodenware	11	5	8	8	6	33	1	34	42	
Woolen and Worsted Goods.....	14	5	7	3	10	12	87	21	108	118
All Industries.....	1245	619	1104	30	1134	614	6417	797	7214	8348

¹ One establishment no partners or stockholders reported.
² Three establishments no partners or stockholders reported.
³ One establishment no partners or stockholders reported.
⁴ One establishment no partners or stockholders reported.
⁵ Two establishments no partners or stockholders reported.
⁶ Three establishments no partners or stockholders reported.
⁷ One establishment no partners or stockholders reported.

PRIVATE FIRMS AND CORPORATIONS: PARTNERS AND STOCKHOLDERS:
BY INDUSTRIES.

1897.

In the following table, the number of private firms and corporations in each industry, together with the number of partners and stockholders by sex, is given:

INDUSTRIES.	Number of establishments.	Number of private firms.	NUMBER OF PARTNERS.			Number of corporations.	NUMBER OF STOCKHOLDERS.			Ac. partners and stockholders.
			Male.	Female.	Total.		Male.	Female.	Total.	
Agricultural Implements.....	31	8	19	.....	19	23	201	35	236	255
Artisans' Tools & Hardware Specialties	10	8	15	.....	15	7	.....	.....	.....	22
Bicycles, Tricycles, etc.....	7	2	3	.....	3	5	28	1	29	32
Boots and Shoes.....	24	9	15	.....	15	15	151	17	168	183
Boxes (wooden and paper).....	29	17	37	14	51	12	45	8	53	104
Brick, Tile and Sewer Pipe.....	23	14	38	.....	38	9	66	20	86	124
Brooms, Brushes and Baskets.....	19	14	21	.....	21	5	39	6	45	66
Burial Cases, Caskets, Coffins, etc.....	4	2	8	.....	8	2	18	.....	18	26
¹ Cement, Lime, Plaster, etc.....	12	3	4	.....	4	8	201	33	234	238
Chairs.....	13	1	1	1	2	12	167	30	197	199
Cigars, Snuff and Tobacco.....	54	51	65	.....	65	3	17	.....	17	82
Clothing.....	25	15	64	22	86	10	52	25	77	163
² Confectionery, Crackers, etc.....	12	2	3	.....	3	7	25	3	28	31
Cooking and Heating Apparatus.....	24	15	30	1	31	9	83	4	87	118
Cooperage.....	21	12	14	.....	14	9	116	3	119	133
Cotton and Linen Goods.....	5	2	4	.....	4	3	169	23	192	196
Electrical & Gas Apparatus & Supplies.	21	8	15	.....	15	13	118	15	133	148
Flour and Feed.....	86	55	112	5	117	31	405	72	477	594
Food Preparations.....	31	17	53	1	54	14	62	5	67	121
Furniture.....	42	11	19	.....	19	31	418	33	451	470
Furs, Gloves and Mittens.....	11	8	16	2	18	3	12	.....	12	30
³ Iron Goods (Malleable).....	25	7	14	.....	14	17	148	5	153	167
Knit Goods.....	15	6	12	1	13	9	60	10	70	83
Lager Beer.....	71	40	57	3	60	31	397	49	446	506
Leather.....	33	19	79	.....	79	14	1460	284	1744	1823
⁴ Lumber, Lath and Shingles.....	168	66	103	2	105	101	548	84	632	737
Malt.....	20	6	14	.....	14	14	123	11	134	148
⁵ Machines and Machinery.....	66	45	73	1	74	39	227	27	254	328
Office and Saloon Fixtures, etc.....	15	10	27	.....	27	5	312	5	317	344
Paints, Oils and Crude Chemicals.....	7	2	4	.....	4	5	18	1	19	23
⁶ Paper and Pulp.....	34	3	3	.....	3	28	156	18	174	177
Printers' Supplies.....	4	.....	.....	.....	.....	4	17	1	18	18
Saddlery, Harness, etc.....	9	5	8	.....	8	4	17	2	19	27
Sash, Doors, Blinds, etc.....	73	43	91	.....	91	30	163	18	181	272
Sheet Metal Goods.....	26	19	34	.....	34	7	46	7	53	87
⁷ Ship and Boat Building.....	6	2	3	.....	3	3	31	7	38	41
Soap, Lye, Potash, etc.....	9	6	9	2	11	3	39	3	42	53
Staves and Heading.....	21	12	26	.....	26	9	50	1	51	77
Stone, (Granite, Marble, etc.).....	10	7	11	1	12	3	23	.....	23	35
Straw Goods.....	5	1	1	.....	1	4	25	2	27	28
Toys and Games.....	5	1	2	.....	2	4	42	1	43	45
Trunks, Valises, etc.....	9	2	4	.....	4	7	58	9	67	71
Veneer.....	9	2	2	.....	2	7	47	4	51	53
Wagons, Carriages and Sleighs.....	53	36	112	4	116	17	250	38	288	404
Woodenware.....	11	6	10	.....	10	5	25	4	29	39
Woolen and Worsted Goods.....	17	5	7	3	10	12	87	23	110	120
All industries.....	1245	625	1262	63	1325	608	6769	947	7716	9041

¹ One establishment no partners or stockholders reported.² Three establishments no partners or stockholders reported.³ One establishment no partners or stockholders reported.⁴ One establishment no partners or stockholders reported.⁵ Two establishments no partners or stockholders reported.⁶ Three establishments no partners or stockholders reported.⁷ One establishment no partners or stockholders reported.

STATISTICS OF MANUFACTURES.

561

CAPITAL INVESTED—BY INDUSTRIES.

1896 AND 1897.

The capital invested by 1,245 establishments is represented in the following table. Comparison is made between the two years, and the relative increase or decrease is noted by amount and percentages.

INDUSTRIES.	No. of establishments.	AMOUNT OF CAPITAL INVESTED.		INCREASE (+) OR DECREASE (-) IN 1897.	
		1896.	1897.	Amounts.	Per cent.
Agricultural implements	31	\$6,247,280	\$7,826,158 +	\$1,578,878	+ 25.27
Artisans' tools and hardware specialties	10	575,979	585,053 +	9,074	+ 1.57
Bicycles, tricycles, etc.....	7	715,272	960,049 +	244,777	+ 31.42
Boots and shoes	24	1,955,624	1,900,423 -	55,201	- 2.90
Boxes (wooden and paper).....	29	1,156,913	1,480,139 +	323,226	+ 27.93
Brick, tiles and sewer pipe.....	23	927,437	903,110 -	24,327	- 2.62
Brooms, brushes and baskets.....	19	212,499	193,093 +	19,406	+ 9.18
Burial cases, caskets, coffins, etc.....	4	266,500	349,500 +	83,000	+ 31.14
Cement, lime, plaster, etc.....	12	986,215	1,046,205 +	59,990	+ 6.08
Chairs	13	3,470,281	3,835,742 +	365,461	+ 10.53
Cigars, snuff and tobacco.....	54	1,314,237	1,616,419 +	302,182	+ 22.99
Clothing	25	1,676,936	1,719,252 +	42,316	+ 2.52
Confectioneries, crackers, etc.....	12	624,741	671,742 +	47,001	+ 7.52
Cooking and heating apparatus.....	24	1,375,296	1,737,501 -	362,205	- 26.33
Cooperage	21	526,788	530,250 +	3,462	+ 0.57
Cotton and linen goods	5	617,171	668,349 +	51,178	+ 8.29
Electrical and gas apparatus and supplies	21	1,713,612	2,086,608 +	372,996	+ 21.70
Flour and feed	86	6,449,116	7,411,133 +	962,017	+ 14.91
Food preparations	31	4,117,091	4,751,285 +	634,194	+ 15.40
Furniture	42	3,045,192	2,776,295 -	268,897	- 8.83
Furs, gloves and mittens.....	11	286,323	351,395 +	65,072	+ 22.73
Iron goods (malleable).....	25	4,223,641	4,427,480 +	203,839	+ 4.82
Knit goods	15	1,440,606	1,756,464 +	315,858	+ 21.92
Lager beer	71	33,943,545	35,539,091 +	1,595,546	+ 4.66
Leather	33	10,394,318	12,124,012 +	1,729,694	+ 16.64
Lumber, lath and shingles.....	168	44,989,633	45,642,002 +	652,369	+ 1.45
Malt	20	4,318,614	5,028,607 +	709,993	+ 16.44
Machines and machinery.....	86	8,244,923	9,038,030 +	793,107	+ 8.77
Office and saloon fixtures, etc.....	15	903,420	816,966 -	86,454	- 9.56
Paints, oils and crude chemicals....	7	699,000	922,750 +	223,750	+ 32.15
Paper and pulp.....	34	8,224,977	9,014,723 +	789,746	+ 9.60
Printers' supplies	4	213,934	264,355 +	50,421	+ 23.56
Saddlery, harness, etc.....	9	196,468	202,989 +	6,521	+ 3.31
Sash, doors, blinds, etc.....	73	5,504,932	5,541,357 +	36,425	+ 0.66
Sheet metal goods.....	26	2,732,280	2,673,622 -	58,658	- 2.14
Ship and boat building.....	6	1,494,344	1,495,259 +	915	+ 0.06
Soap, lye, potash, etc.....	9	509,000	521,289 +	12,289	+ 2.41
Staves and heading.....	21	333,249	425,741 +	92,492	+ 27.75
Stone (granite, marble, etc.).....	10	316,826	224,876 -	91,950	- 29.02
Straw goods	5	626,915	704,900 +	77,985	+ 12.23
Toys and games.....	5	303,068	337,624 +	34,556	+ 11.40
Trunks, valises, etc.....	9	807,589	834,179 +	26,590	+ 3.29
Veneer	9	232,837	305,224 +	72,387	+ 31.08
Wagons, carriages and sleighs.....	53	4,258,192	5,288,915 +	1,030,723	+ 24.20
Woodenware	11	939,836	1,030,234 +	40,398	+ 4.08
Woolen and worsted goods.....	17	1,752,474	2,200,279 +	447,805	+ 25.90
All industries.....	1245	\$175,905,124	\$189,760,669 +	\$13,855,545	+ 7.87

STOCK OR MATERIAL USED—BY INDUSTRIES.

1896 AND 1897.

The figures given in the table below for stock or material used, represent the amount reported by 1,245 establishments for both years. Comparison is made between the two years, and the relative increase or decrease is noted by amount and percentages.

INDUSTRIES.	No. of establish- ments.	VALUE OF STOCK OR MATERIAL USED.		INCREASE (+) OR DECREASE (-) IN 1897.	
		1896.	1897.	Amounts.	Per cent.
Agricultural implements	31	\$2,268,950	\$2,174,798	-\$94,152	-4.15
Artisans' tools and hardware special- ties	10	267,855	237,492	-30,363	-11.33
Bicycles, tricycles, etc.....	7	776,793	910,253	+133,460	+17.18
Boots and shoe.....	24	1,742,081	1,983,766	+241,685	+13.84
Boxes (wooden and paper).....	29	898,500	1,030,549	+132,049	+14.72
Brick, tiles and sewer pipe.....	23	69,573	66,990	-2,583	-3.71
Brooms, brushes and baskets.....	19	74,303	73,355	-948	-1.27
Burial cases, caskets, coffins, etc....	4	222,156	284,192	+62,036	+27.92
Cement, lime, plaster, etc.....	12	308,188	277,809	-30,379	-9.85
Chairs	13	1,007,428	1,077,342	+69,914	+6.94
Cigars, snuff and tobacco.....	54	1,265,515	1,324,851	+59,336	+4.69
Clothing	25	1,422,387	1,593,826	+171,439	+12.05
Confectioneries, crackers, etc.....	12	813,548	981,630	+168,082	+20.65
Cooking and heating apparatus.....	24	476,672	543,257	+66,585	+13.92
Cooperage	21	441,433	346,976	-94,457	-21.39
Cotton and linen goods.....	5	265,271	320,070	+54,799	+20.66
Electrical and gas apparatus and supplies	21	829,599	870,782	+41,183	+4.95
Flour and feed.....	86	15,889,410	18,724,577	+2,835,167	+17.84
Food preparations	31	10,173,349	11,338,905	+1,165,556	+11.45
Furniture	42	1,448,760	1,333,503	-115,257	-7.95
Furs, gloves and mittens.....	11	429,302	309,404	-119,898	-27.93
Iron goods (malleable).....	25	2,753,694	3,010,246	+256,552	+9.31
Knit goods	15	626,073	792,277	+166,204	+26.54
Lager beer	71	3,270,795	3,702,671	+431,876	+13.20
Leather	33	9,789,314	11,320,816	+1,531,502	+15.64
Lumber, lath and shingles.....	168	9,861,062	12,187,522	+2,326,460	+23.59
Malt	20	2,376,625	2,451,507	+74,882	+3.19
Machines and machinery.....	86	3,059,369	3,333,014	+273,645	+8.94
Office and saloon fixtures, etc.....	15	285,487	261,905	-23,582	-8.29
Paints, oils and crude chemicals ...	7	880,618	926,568	+45,950	+5.21
Paper and pulp	34	3,392,882	3,481,577	+88,695	+2.61
Printers' supplies	4	87,081	90,968	+3,887	+4.46
Saddlery, harness, etc.....	9	149,628	236,897	+87,269	+58.32
Sash, doors, blinds, etc.....	73	2,680,742	2,879,007	+198,265	+7.39
Sheet metal goods.....	26	1,708,597	1,898,543	+189,946	+11.11
Ship and boat building.....	6	493,813	290,677	-203,136	-41.13
Soap, lye, potash, etc.....	9	238,932	382,099	+143,167	+59.92
Staves and heading.....	21	186,678	230,193	+43,515	+23.31
Stone, (granite, marble, etc.).....	10	111,395	113,895	+2,500	+2.24
Straw goods	5	330,751	360,168	+29,417	+8.89
Toys and games.....	5	94,323	97,381	+3,058	+3.24
Trunks, valises, etc.....	9	359,010	411,193	+52,183	+14.53
Veneer	9	102,124	137,248	+35,124	+34.39
Wagons, carriages and sleighs.....	53	1,522,409	2,116,750	+594,341	+39.03
Woodenware	11	922,041	767,692	-154,349	-16.73
Woolen and worsted goods.....	17	652,750	844,629	+191,879	+29.70
All Industries	1245	\$87,027,266	\$98,130,070	+\$11,102,804	+12.76

GOODS MADE AND WORK DONE—BY INDUSTRIES,
1896 AND 1897.

The figures given for value of goods made and work done, represent the value of goods made and work done in the 1,245 establishments reporting for both years. Comparison is made between the two years and the relative increase or decrease is noted by amount and percentages.

INDUSTRIES.	No. of establish- ments.	VALUE OF GOODS MADE AND WORK DONE.		INCREASE (+) OR DECREASE (-) IN 1897.	
		1896.	1897.	Amounts.	Per cent.
Agricultural implements	31	\$4,529,474	\$4,242,134	\$287,340	- 6.22
Artisans' tools and hardware special- ties	10	712,165	624,404	87,761	-12.32
Bicycles, tricycles, etc.....	7	1,340,014	1,509,852	169,838	+ 12.67
Boots and shoes	24	3,018,633	3,416,422	397,789	+ 13.17
Boxes (wooden and paper).....	29	1,615,386	1,849,952	234,566	+ 14.52
Brick, tiles and sewer pipe.....	23	235,040	225,824	9,216	- 3.92
Brooms, brushes and baskets.....	19	178,618	174,404	4,214	- 2.36
Burial cases, caskets, coffins, etc....	4	447,913	559,898	111,985	+ 25.00
Cement, lime, plaster, etc.....	12	683,834	603,310	80,524	-11.77
Chairs	13	2,299,371	2,494,412	195,041	+ 8.48
Cigars, snuff and tobacco.....	54	2,085,317	2,206,005	120,688	+ 5.78
Clothing	25	2,670,425	2,956,824	286,399	+ 10.72
Confectioneries, crackers, etc.....	12	1,450,215	1,570,201	119,986	+ 8.27
Cooking and heating apparatus.....	24	1,185,068	1,325,252	140,184	+ 11.83
Cooperage	21	893,735	717,497	176,238	-19.71
Cotton and linen goods.....	5	472,278	546,324	74,046	+ 15.67
Electrical and gas apparatus and supplies	21	2,162,352	2,156,197	6,155	- 0.28
Flour and feed	86	19,186,233	22,016,981	2,830,748	+ 14.75
Food preparations	31	12,583,578	13,717,083	1,133,505	+ 9.00
Furniture	42	3,036,842	2,776,577	260,265	- 8.57
Furs, gloves and mittens.....	11	750,019	528,438	221,572	-29.54
Iron goods (malleable).....	25	6,183,803	6,342,249	158,446	+ 2.56
Knit goods	15	1,330,961	1,654,638	323,677	+ 24.31
Lager beer	71	15,394,071	16,945,217	1,551,146	+ 10.07
Leather	33	13,445,346	15,153,361	1,708,015	+ 12.70
Lumber, lath and shingles.....	163	18,322,764	22,043,162	3,720,398	+ 20.30
Malt	20	3,578,934	3,681,990	103,056	+ 2.87
Machines and machinery.....	86	7,662,023	8,155,581	493,558	+ 6.44
Office and saloon fixtures, etc.....	15	753,398	687,727	65,671	+ 8.71
Paints, oils and crude chemicals.....	7	1,247,149	1,315,557	68,408	+ 5.48
Paper and pulp.....	34	6,592,166	6,555,806	36,360	- 0.55
Printers' supplies	4	222,555	230,469	7,914	+ 3.55
Saddlery, harness, etc.....	9	276,188	414,175	137,987	+ 49.96
Sash, doors, blinds, etc.....	73	5,002,045	5,260,706	258,661	+ 5.17
Sheet metal goods.....	26	3,150,438	3,376,417	225,989	+ 7.10
Ship and boat building.....	6	1,202,260	666,473	535,787	-44.57
Soap, lye, potash, etc.....	9	430,987	675,411	244,424	+ 56.71
Staves and heading.....	21	418,398	524,414	106,016	+ 25.33
Stone (granite, marble, etc.).....	10	311,417	311,886	469	+ 0.15
Straw goods	5	789,652	852,521	62,869	+ 7.96
Toys and games.....	5	225,587	226,606	1,019	+ 0.45
Trunks, valises, etc.....	9	758,118	848,396	90,278	+ 11.90
Veneer	9	283,675	373,469	89,794	+ 31.65
Wagons, carriages and sleighs.....	53	3,121,558	4,256,259	1,134,701	+ 36.67
Woodenware	11	1,700,831	1,560,375	140,456	- 8.25
Woolen and worsted goods.....	17	1,212,072	1,613,817	401,745	+ 33.14
All Industries	1245	\$155,152,906	\$169,946,673	\$14,793,767	+ 9.53

SMALLEST, GREATEST AND AVERAGE NUMBER OF PERSONS EMPLOYED—
BY INDUSTRIES,

The terms "Period of Employment of Smallest Number" and "Period of Employment of Greatest Number," as used in the following table, are meant those times, as regards aggregate number of persons employed, when the smallest or greatest number, respectively, was employed. Wage earners only are considered; officers, clerks or other salaried persons are not included.

AGGREGATES—1896

INDUSTRIES.	No of establishments.	Aggregate average number of persons employed.	AGGREGATE OF PERSONS EMPLOYED AT PERIODS OF EMPLOYMENT OF—		Excess greatest over smallest number.
			Smallest number.	Greatest number.	
Agricultural implements	31	1,856	1,517	2,513	996
Artisans' tools and hardware specialties	10	359	232	477	245
Beverages (not spirituous, soft drinks)	18	186	136	247	111
Bicycles, tricycles, etc.....	7	677	309	971	662
Boots and shoes.....	24	2,239	2,012	2,435	423
Boxes (wooden and paper).....	29	1,195	1,090	1,268	178
Brick, tile and sewer pipe.....	23	278	56	600	544
Brooms, brushes, etc.....	19	189	145	235	90
Burial cases, caskets, coffins, etc.....	4	300	297	314	17
Cement, lime, plaster, etc.....	12	296	183	435	252
Chairs	13	2,775	2,689	2,849	160
Chemical preparations	13	140	126	168	42
Cigars, snuff and tobacco.....	54	895	745	997	252
Clothing	25	1,736	1,610	1,866	256
Coal and wood.....	28	1,463	1,045	2,069	1,024
Confectioneries, crackers, etc.....	12	699	667	742	75
Cooking and heating apparatus.....	24	1,157	937	1,309	372
Cooperage	21	658	585	724	139
Cotton and linen goods.....	5	552	507	629	122
Electrical and gas apparatus and supplies	21	1,041	969	1,141	172
Electrical and gas lighting, power and street railways	49	1,861	1,624	2,029	405
Fancy articles	8	112	86	171	85
Flour and feed	86	1,095	1,025	1,144	119
Food preparations	31	1,981	1,525	3,887	2,362
Furniture	42	2,710	2,317	3,020	703
Furs, gloves and mittens.....	11	369	292	454	162
Grain and warehouse men.....	12	150	132	269	137
Iron goods (malleable).....	25	3,315	3,069	3,654	585
Iron (pig)	2	116	85	191	106
Knit goods	15	1,605	1,414	1,716	302
Lager beer	71	3,133	3,032	3,244	212
Laundries	75	761	645	883	238
Leather	33	4,340	4,075	4,872	797
Lithographing and engraving.....	7	437	432	462	30
Lumber, lath and shingles.....	168	11,542	6,313	17,900	11,587
Malt	20	505	368	584	216
Machines and machinery.....	86	4,317	3,792	4,921	1,129
Mixed textiles	9	368	341	482	141
Office and saloon fixtures, etc.....	15	630	486	785	299
Paints, oils and crude chemicals.....	7	128	88	138	50
Paper and pulp.....	34	3,117	2,774	3,667	893
Printers' supplies	4	186	173	196	23
Railway equipment	20	5,246	4,895	6,500	1,605
Saddlery, harness, etc.....	9	159	131	201	70

SMALLEST, GREATEST AND AVERAGE NUMBER OF PERSONS EMPLOYED—
BY INDUSTRIES.

The terms "Period of Employment of Smallest Number" and "Period of Employment of Greatest Number," as used in the following table, are meant those times, as regards aggregate number of persons employed, when the smallest or greatest number, respectively, was employed. Wage earners only are considered; officers, clerks or other salaried persons are not included.

AGGREGATES—1897.

INDUSTRIES.	No. of establishments.	Aggregate average number of persons employed.	AGGREGATE OF PERSONS EMPLOYED AT PERIODS OF EMPLOYMENT OF—		Excess greatest over smallest number.
			Smallest number.	Greatest number.	
Agricultural implements	31	1,866	1,568	2,386	818
Artisans' tools and hardware specialties	10	443	214	801	587
Beverages (not spirituous, soft drinks).	18	204	160	241	81
Bicycles, tricycles, etc.....	7	658	301	962	661
Boots and shoes	24	2,299	2,186	2,457	271
Boxes (wooden and paper).....	29	1,336	1,180	1,554	374
Brick, tile and sewer pipe.....	23	280	56	632	576
Brooms, brushes, etc.....	19	207	153	288	135
Burial cases, caskets and coffins.....	4	313	306	331	25
Cement, lime, plaster, etc.....	12	328	193	553	360
Chairs	13	3,091	2,992	3,319	327
Chemical preparations	13	146	136	166	30
Cigars, snuff and tobacco.....	54	955	927	995	68
Clothing	25	1,620	1,572	1,798	226
Coal and wood.....	28	1,759	1,280	2,719	1,439
Confectioneries, crackers, etc.....	12	734	635	891	256
Cooking and heating apparatus.....	24	1,247	1,137	1,578	441
Cooperage	21	627	543	773	230
Cotton and linen goods.....	5	479	274	600	326
Electrical and gas apparatus and supplies	21	1,045	998	1,179	181
Electrical and gas lighting, power and street railways	49	1,932	1,764	2,207	443
Fancy articles	8	128	87	177	90
Flour and feed.....	86	1,132	1,108	1,205	97
Food preparations	31	2,118	1,517	4,317	2,800
Furniture	42	2,441	2,205	2,838	633
Furs, gloves and mittens.....	11	284	226	335	109
Grain and warehouse men.....	12	181	151	281	130
Iron goods (malleable).....	25	3,350	2,594	4,084	1,490
Iron (pig).....	2	144	89	220	131
Knit goods	15	1,751	1,366	1,953	587
Lager beer.....	71	3,108	2,984	3,352	368
Laundries	75	783	700	874	174
Leather	33	4,754	4,201	5,329	1,128
Lithographing and engraving.....	7	440	431	454	23
Lumber, lath and shingles.....	168	11,827	5,195	19,706	14,511
Malt	20	514	363	590	227
Machines and machinery.....	86	4,486	4,201	5,256	1,055
Mixed textiles	9	348	317	428	111
Office and saloon fixtures, etc.....	15	558	422	713	291
Paints, oils and crude chemicals.....	7	139	126	164	38
Paper and pulp.....	34	3,152	2,893	3,716	823
Printers supplies	4	190	187	199	12
Railway equipment	20	9,933	9,483	10,416	933
Saddlery, harness, etc.....	9	215	193	264	71

SMALLEST, GREATEST AND AVERAGE NUMBER OF PERSONS EMPLOYED BY INDUSTRIES—Continued.

The terms "Period of Employment of Smallest Number" and "Period of Employment of Greatest Number," as used in the following table, are meant those times, *as regards aggregate number of persons employed*, when the smallest or greatest number, respectively, was employed. Wage earners only are considered; officers, clerks or other salaried persons are not included.

AGGREGATES, 1896.

INDUSTRIES.	No. of establishments.	Aggregate average number of persons employed.	AGGREGATES OF PERSONS EMPLOYED AT PERIODS OF EMPLOYMENT OF—		Excess greatest over smallest number.
			Smallest number.	Greatest number.	
Sash, doors, blinds and mouldings.....	73	3,207	2,716	3,714	998
Sheet metal goods.....	26	1,561	1,467	1,982	515
Ship and boat building.....	6	960	385	1,566	1,181
Soap, lye, potash, etc.....	9	133	126	147	21
Staves and heading.....	21	442	316	665	349
Stone (granite, marble, etc.).....	10	173	103	245	142
Straw goods.....	5	606	408	849	441
Toys and games.....	5	248	180	337	157
Trunks, valises, etc.....	9	587	478	659	181
Veneer.....	9	294	228	408	180
Wagons, carriages and sleighs.....	53	2,084	1,567	2,455	888
Woodenware.....	11	1,611	1,587	1,692	106
Woolen and worsted goods.....	17	883	658	1,054	396
Miscellaneous.....	13	388	379	414	35
All Industries.....	1,499	80,051	65,569	99,546	33,977

SMALLEST, GREATEST AND AVERAGE NUMBER OF PERSONS EMPLOYED BY INDUSTRIES—Continued.

The terms "Period of Employment of Smallest Number" and "Period of Employment of Greatest Number," as used in the following table, are meant those times, *as regards aggregate number of persons employed*, when the smallest or greatest number, respectively, was employed. Wage earners only are considered; officers, clerks or other salaried persons are not included.

AGGREGATES, 1897.

INDUSTRIES.	No. of establishments.	Aggregate average number of persons employed.	AGGREGATES OF PERSONS EMPLOYED AT PERIODS OF EMPLOYMENT OF—		Excess greatest over smallest number.
			Smallest number.	Greatest number.	
Sash, doors, blinds and mouldings.....	73	3,507	2,788	4,015	1,227
Sheet metal goods	26	2,042	1,833	2,239	406
Ship building	6	622	310	939	629
Soap, lye and potash.....	9	165	152	181	29
Staves and heading.....	21	521	375	780	405
Stone, (granite, marble, etc.).....	10	182	116	246	130
Straw goods	5	555	343	817	474
Toys and games.....	5	253	186	364	178
Trunks, valises, etc.....	9	635	514	710	196
Veneer	9	385	331	494	163
Wagons, carriages and sleighs.....	53	2,370	2,193	2,641	448
Woodenware	11	1,324	1,172	1,470	298.
Woolen and worsted goods	17	1,048	907	1,223	316
Miscellaneous	13	380	373	419	46
All industries.....	1,499	87,534	71,207	109,839	38,632

SMALLEST, GREATEST AND AVERAGE NUMBER OF PERSONS EMPLOYED—
BY INDUSTRIES.

In this table averages for each establishment are given. These have been arrived at by dividing the aggregates given on page 564, by the number of establishments in each industry. Wage earners only are considered; officers, clerks and other salaried persons are not included.

AVERAGES, 1896.

INDUSTRIES.	No. of establishments.	NUMBER OF PERSONS EMPLOYED IN EACH ESTABLISHMENT.			
		Average number.	Smallest number.	Greatest number.	Excess of greatest over Smallest.
Agricultural implements	31	60	49	81	32
Artisans' tools and hardware specialties	10	36	23	47	24
Beverages (not spirituous, soft drinks)..	18	10	7	13	6
Bicycles, tricycles, etc.....	7	96	44	138	94
Boots and shoes.....	24	93	84	101	17
Boxes (wooden and paper).....	29	41	37	43	6
Brick, tile and sewer pipe.....	23	12	2	26	24
Brooms and brushes, etc.....	19	9	7	12	5
Burial cases, caskets, coffins, etc.....	4	75	74	78	4
Cement, lime, plaster, etc.....	12	24	15	36	21
Chairs	13	213	206	219	13
Chemical preparations	13	10	9	13	4
Cigars, snuff and tobacco.....	54	16	13	18	5
Clothing	25	69	64	74	10
Coal and wood.....	28	52	37	73	36
Confectioneries, crackers, etc.....	12	58	55	61	6
Cooking and heating apparatus	24	48	39	54	15
Cooperage	21	31	28	34	6
Cotton and linen goods.....	5	110	101	126	25
Electrical and gas apparatus and supplies	21	50	46	54	8
Electrical and gas lighting, power and street railways	49	38	33	41	8
Fancy articles	8	14	10	21	11
Flour and feed	86	12	11	13	2
Food preparations	31	63	49	125	76
Furniture	42	64	55	72	17
Furs, gloves and mittens.....	11	33	26	41	15
Grain and warehouse men.....	12	12	11	22	11
Iron goods (malleable).....	25	132	122	146	24
Iron (pig).....	2	58	42	95	53
Knit goods	15	107	94	114	20
Lager beer	71	44	42	45	3
Laundries	75	10	8	11	3
Leather	33	131	123	147	24
Lithographing and engraving	7	60	60	66	6
Lumber, lath and shingles.....	168	68	37	106	69
Malt	20	25	18	29	11
Machines and machinery	86	50	44	57	13
Mixed textiles	9	40	37	53	16
Office and saloon fixtures, etc.....	15	42	32	52	20
Paints, oils and crude chemicals.....	7	18	12	19	7
Paper and pulp.....	34	91	81	108	27
Printers' supplies	4	46	43	48	5
Railway equipment	20	262	244	325	81
Saddlery, harness, etc.....	9	17	14	22	8

SMALLEST, GREATEST AND AVERAGE NUMBER OF PERSONS EMPLOYED—
BY INDUSTRIES.

In this table averages for each establishment are given. These have been arrived at by dividing the aggregates given on page 565, by the number of establishments in each industry. Wage earners only are considered; officers, clerks and other salaried persons are not included.

AVERAGES, 1897.

INDUSTRIES.	No of establishments.	NUMBER OF PERSONS EMPLOYED IN EACH ESTABLISHMENT.			
		Average number.	Smallest number.	Greatest number.	Excess of greatest over smallest.
Agricultural implements	31	60	50	77	27
Artisans' tools and hardware specialties	10	44	21	80	59
Beverages (not spirituous, soft drinks) ..	18	11	9	13	4
Bicycles, tricycles, etc.....	7	94	43	137	94
Boots and shoes.....	24	95	91	102	11
Boxes (wooden and paper).....	29	45	40	53	13
Brick, tile and sewer pipe.....	23	12	2	27	25
Brooms, brushes, etc.....	19	10	8	15	7
Burial cases, caskets, coffins, etc.....	4	78	76	82	6
Cement, lime, plaster, etc.....	12	27	16	46	30
Chairs	13	237	230	254	24
Chemical preparations	13	11	10	12	2
Cigars, snuff and tobacco.....	54	17	17	18	1
Clothing	25	61	52	71	19
Coal and wood	28	62	45	97	52
Confectioneries, crackers etc.....	12	61	53	74	21
Cooking and heating apparatus.....	24	52	47	65	18
Cooperage	21	29	26	36	10
Cotton and linen goods.....	5	95	55	120	65
Electrical and gas apparatus and supplies	21	49	47	56	9
Electrical and gas lighting, power and street railway	49	39	36	45	9
Fancy articles	8	16	11	22	11
Flour and feed.....	86	13	12	14	2
Food preparations	31	68	48	139	91
Furniture	42	58	52	67	15
Furs, gloves and mittens.....	11	26	20	30	10
Grain and warehouse men.....	12	15	12	23	11
Iron goods (malleable).....	25	134	103	163	60
Iron (pig)	2	72	44	110	66
Knit goods	15	116	91	130	39
Lager beer	71	43	42	47	5
Laundries	75	10	9	11	2
Leather	33	144	127	161	34
Lithographing and engraving	7	62	61	64	3
Lumber, lath and shingles	168	70	31	117	86
Malt	20	25	18	29	11
Machines and machinery.....	86	52	48	61	13
Mixed textiles	9	38	35	47	12
Office and saoon fixtures, etc.....	19	37	28	47	19
Paints, oils and crude chemicals	7	19	18	23	5
Paper and pulp.....	34	92	85	109	24
Printers' supplies	4	47	46	49	3
Railway equipment	20	496	474	520	46
Saddlery, harness, etc.....	9	24	20	29	9

SMALLEST, GREATEST AND AVERAGE NUMBER OF PERSONS EMPLOYED BY
BY INDUSTRIES—Continued.

In this table averages for each establishment are given. These have been arrived at by dividing the aggregates given on page 566, by the number of establishments in each industry. Wage earners only are considered; officers, clerks and other salaried persons are not included.

AVERAGES, 1896.

INDUSTRIES.	No. of establishments.	NUMBER OF PERSONS EMPLOYED IN EACH ESTABLISHMENT.			
		Average number.	Smallest number.	Greatest number.	Excess of greatest over smallest.
Sash, doors, blinds and mouldings.....	73	44	37	50	13
Sheet metal goods.....	26	60	56	76	20
Ship and boat building.....	6	160	64	260	196
Soap, lye, potash, etc.....	9	14	14	16	2
Staves and heading.....	21	21	15	32	17
Stone, (granite, marble, etc.).....	10	17	10	24	14
Straw goods.....	5	121	81	169	88
Toys and games.....	5	49	36	67	31
Trunks, valises, etc.....	9	65	53	73	20
Veneer.....	9	32	25	45	20
Wagons, carriages and sleighs.....	53	39	29	46	17
Woodenware.....	11	146	144	153	9
Woolen and worsted goods.....	17	52	38	62	24
Miscellaneous.....	13	29	29	32	3
All industries.....	1,499	53	44	66	22

SMALLEST, GREATEST AND AVERAGE NUMBER OF PERSONS EMPLOYED —
BY INDUSTRIES — Continued.

In this table averages for each establishment are given. These have been arrived at by dividing the aggregates given on page 567, by the number of establishments in each industry. Wage earners only are considered; officers, clerks and other salaried persons are not included.

AVERAGES — 1997.

INDUSTRIES.	No. of establishments.	NUMBER OF PERSONS EMPLOYED IN EACH ESTABLISHMENT.			
		Average number.	Smallest number.	Greatest number.	Excess of greatest over smallest.
Sash, doors, blinds and mouldings.....	73	48	33	55	17
Sheet metal goods.....	26	78	70	86	16
Ship and boat building	6	103	51	156	105
Soap, lye, potash, etc.....	9	18	17	20	3
Staves and heading	21	25	18	37	19
Stone, (granite, marble, etc).....	10	18	11	24	13
Straw goods	5	111	68	163	95
Toys and games	5	50	37	70	33
Trunks, valises, etc.....	9	70	57	79	22
Veneer	9	42	36	55	19
Wagons, carriages and sleighs.....	53	44	41	49	8
Woodenware	11	120	106	133	27
Woolen and worsted goods.....	17	61	53	72	19
Miscellaneous	13	29	29	32	3
All industries	1,499	58	48	73	25

RANGE OF EMPLOYMENT AND UNEMPLOYMENT—BY INDUSTRIES.

1896 A · D 1897.

A comparison of the excess of greatest over smallest number of persons employed in both years is given in the following table. The increase or decrease is noted both in number and percentages. Wage earners only are considered; officers, clerks and other salaried persons are not included.

INDUSTRIES.	No. of establishments	EXCESS OF GREATEST OVER SMALLEST NUMBER PERSONS EMPLOYED.		INCREASE (+) OR DECREASE (-) IN 1897.	
		1896.	1897.	Number.	Percentages.
Agricultural implements	31	996	818—	178—	17.87
Artisans' tools and hardware specialties	10	245	587+	342+	139.59
Beverages (not spirituous, soft drinks)..	18	111	81—	30—	27.02
Bicycles, tricycles, etc.....	7	662	661—	1—	0.15
Boots and shoes	24	423	271—	152—	35.93
Boxes (wooden and paper).....	29	178	374+	196+	110.11
Brick, tile and sewer pipe.....	23	544	576+	32+	5.88
Brooms, brushes, etc.....	19	90	135+	45+	50.00
Burial cases, caskets, coffins, etc.....	4	17	25+	8+	47.05
Cement, lime, plaster, etc.....	12	252	360+	108+	42.85
Chairs	13	160	327+	167+	104.37
Chemical preparations	13	42	30—	12—	28.57
Cigars, snuff and tobacco	54	252	68+	184+	73.01
Clothing	25	256	226—	30—	11.71
Coal and wood	28	1,024	1,439+	415+	40.52
Confectioneries, crackers, etc.....	12	75	256+	181+	241.33
Cooking and heating apparatus.....	24	372	441+	69+	18.54
Cooperage.....	21	139	230+	91+	65.46
Cotton and linen goods	5	122	326+	204+	167.21
Electrical and gas apparatus and supplies	21	172	181+	9+	523
Electrical and gas lighting, power and street railways.....	49	405	443+	38+	9.38
Fancy articles	8	85	90+	5+	5.88
Flour and feed	86	119	97—	22—	18.48
Food preparations	31	2,362	2,800+	438+	18.54
Furniture	42	703	633—	70—	9.95
Furs, gloves and mittens.....	11	162	109—	53—	32.71
Grain and warehouse men.....	12	137	130—	7—	5.10
Iron goods (malleable).....	25	585	1,490+	905+	154.70
Iron (pig)	2	106	131+	25+	23.58
Knit goods	15	302	587+	285+	94.37
Lager beer	71	212	368+	156+	73.58
Laundries	75	238	174—	64—	26.89
Leather	33	797	1,128+	331+	41.53
Lithographing and engraving	7	30	23—	7—	23.33
Lumber, lath and shingles.....	168	11,587	14,511+	2,924+	25.23
Malt	20	216	227+	11+	5.09
Machines and machinery.....	86	1,129	1,055—	74—	6.55
Mixed textiles.....	9	141	111—	30—	21.27
Office and saloon fixtures, etc.....	15	299	291+	8+	2.67
Paints, oils and crude chemicals.....	7	50	38—	12—	24.
Paper and pulp.....	34	893	823—	70—	8.17
Printers' supplies	4	23	12—	11—	47.82
Railway equipment	20	1,605	933—	672—	41.86
Saddlery, harness, etc.....	9	70	71+	1+	1.42

RANGE OF EMPLOYMENT AND UNEMPLOYMENT—BY INDUSTRIES—Cont.
1896 AND 1897.

A comparison of the excess of greatest over smallest number of persons employed in both years is given in the following table. The increase or decrease is noted both in number and percentage. Wage earners only are considered; officers, clerks and other salaried persons are not included.

INDUSTRIES.	No. of establishments	EXCESS OF GREATEST OVER SMALLEST NUMBER PERSONS EMPLOYED.		INCREASE (+) OR DECREASE (-) IN 1897.	
		1896.	1897.	Number.	Percentages.
Sash, doors, blinds and moulding.....	73	998	1,227+	229+	22.94
Sheet metal goods.....	26	515	406—	109—	21.16
Ship and boat building.....	6	1,181	629—	552—	46.74
Soap, lye, potash, etc.....	9	21	29+	8+	38.09
Staves and heading.....	21	349	405+	56+	16.04
Stone, (granite, marble, etc.).....	10	142	130—	12—	8.45
Straw goods.....	5	441	474+	33+	7.48
Toys and games.....	5	157	178+	21+	13.37
Trunks, valises, etc.....	9	181	196+	15+	8.30
Veneer.....	9	180	163—	17—	9.44
Wagons, carriages and sleighs.....	53	888	448—	440—	49.54
Woodenware.....	11	105	298+	193+	183.80
Woolen and worsted goods.....	17	396	316—	80—	22.72
Miscellaneous.....	13	35	46+	11+	31.42
All industries.....	1,499	33,977	38,632+	4,655+	13.70

PERSONS EMPLOYED: BY INDUSTRIES. AGGREGATES, BY MONTHS—1896 AND 1897.

The following table shows the aggregate number of persons employed, by sex, during each month of the years 1896 and 1897.

AGRICULTURAL IMPLEMENTS (31 ESTABLISHMENTS).

Months	1896			1897.		
	Males.	Fe-males.	Total	Males.	Fe-males.	Total
January	2,481	1	2,482	1,864	1	1,865
February	2,488	1	2,489	2,146	1	2,147
March	2,512	1	2,513	2,199	1	2,200
April	2,256	1	2,257	1,999	1	2,000
May	1,925	1	1,926	1,793	1	1,794
June	1,823	1	1,824	1,749	1	1,750
July	1,785	1	1,786	1,716	1	1,717
August	1,556	1	1,557	1,590	1	1,591
September	1,668	1	1,669	1,567	1	1,568
October	1,516	1	1,517	1,685	1	1,686
November	1,636	1	1,637	1,877	1	1,878
December	1,812	1	1,813	2,191	1	2,192

ARTISANS' TOOLS AND HARDWARE SPECIALTIES (10 ESTABLISHMENTS).

January	449	.....	449	494	.....	494
February	465	.....	465	441	.....	441
March	447	.....	447	380	.....	380
April	449	.....	449	384	.....	384
May	367	.....	367	383	.....	383
June	283	.....	283	331	.....	331
July	258	.....	258	335	.....	335
August	252	.....	252	356	.....	356
September	232	.....	232	420	.....	420
October	310	.....	310	486	.....	486
November	342	.....	342	592	.....	592
December	422	.....	422	714	.....	714

BEVERAGES,—NOT SPIRITUOUS, SOFT DRINKS—(18 ESTABLISHMENTS).

January	136	.....	136	159	1	160
February	204	.....	204	171	3	174
March	168	17	185	180	20	200
April	169	17	186	177	17	194
May	174	17	191	198	20	218
June	186	17	203	192	18	210
July	195	17	212	212	20	232
August	220	17	237	210	18	228
September	201	17	218	208	20	228
October	173	15	188	176	20	196
November	176	17	193	186	22	208
December	168	15	183	181	21	202

PERSONS EMPLOYED: BY INDUSTRIES. AGGREGATES, BY MONTHS—
1896 AND 1897—Continued.

BICYCLES, TRICYCLES, ETC. (7 ESTABLISHMENTS).

Months.	1896.			1897.		
	Males.	Fe- males.	Total.	Males.	Fe- males.	Total.
January	668	1	669	686	.....	686
February	764	1	765	759	.....	759
March	801	1	802	773	.....	773
April	899	7	906	858	1	859
May	902	7	909	862	1	863
June	815	6	821	709	1	710
July	675	1	676	598	.....	598
August	530	1	531	505	.....	505
September	308	1	309	301	.....	301
October	482	1	483	530	.....	530
November	586	1	587	626	.....	626
December	666	1	667	684	.....	684

BOOTS AND SHOES (24 ESTABLISHMENTS).

January	1,608	773	2,381	1,618	779	2,397
February	1,633	747	2,380	1,630	810	2,440
March	1,580	780	2,360	1,591	793	2,384
April	1,549	746	2,295	1,593	775	2,368
May	1,516	728	2,244	1,575	743	2,318
June	1,498	711	2,209	1,506	714	2,220
July	1,486	686	2,172	1,507	686	2,193
August	1,507	666	2,173	1,547	719	2,266
September	1,484	688	2,172	1,534	719	2,253
October	1,524	690	2,214	1,548	700	2,248
November	1,389	623	2,012	1,501	685	2,186
December	1,538	699	2,237	1,568	743	2,311

BOXES—WOODEN AND PAPER—(29 ESTABLISHMENTS).

January	793	297	1,090	836	344	1,180
February	805	324	1,129	831	354	1,185
March	836	374	1,210	901	395	1,296
April	871	345	1,216	920	382	1,302
May	914	345	1,259	954	377	1,331
June	895	333	1,228	989	375	1,364
July	876	331	1,207	1,029	373	1,402
August	869	334	1,203	1,012	369	1,381
September	853	356	1,209	1,049	391	1,440
October	835	360	1,195	1,021	398	1,419
November	847	361	1,208	1,022	406	1,428
December	834	354	1,188	907	396	1,303

BRICK, TILE AND SEWER PIPE (23 ESTABLISHMENTS).

January	66	.....	66	56	.....	56
February	71	.....	71	80	.....	80
March	101	.....	101	77	.....	77
April	138	.....	138	204	.....	204
May	422	.....	422	462	.....	462
June	598	.....	598	570	.....	570
July	600	.....	600	541	.....	541
August	560	.....	560	428	.....	428
September	446	.....	446	379	.....	379
October	197	.....	197	329	.....	329
November	79	.....	79	149	.....	149
December	56	.....	56	80	.....	80

PERSONS EMPLOYED: BY INDUSTRIES. AGGREGATES, BY MONTHS—
1896 AND 1897—Continued.

BROOMS, BRUSHES AND BASKETS (19 ESTABLISHMENTS).

Months.	1896.			1897.		
	Males.	Fe- males.	Total.	Males.	Fe- males.	Total.
January	142	3	145	153	2	155
February	154	3	157	158	2	160
March	182	3	185	209	6	215
April	220	6	226	213	6	219
May	220	6	226	228	6	234
June	204	5	209	221	6	227
July	216	5	221	233	6	239
August	218	5	223	240	6	246
September	212	5	217	233	2	235
October	184	3	187	214	2	216
November	166	3	169	182	2	184
December	144	2	146	151	2	153

BURIAL CASES, CASKETS, COFFINS, ETC. (4 ESTABLISHMENTS).

January	243	57	300	232	74	306
February	243	57	300	234	74	308
March	243	57	300	234	74	308
April	247	57	304	237	74	311
May	246	57	303	237	74	311
June	244	57	301	242	74	316
July	246	57	303	243	74	317
August	246	57	303	242	74	316
September	243	57	300	242	74	316
October	240	57	297	243	74	317
November	240	57	297	245	74	319
December	240	57	297	244	74	318

CEMENT, LIME, PLASTER, ETC. (12 ESTABLISHMENTS).

January	189	1	190	192	1	193
February	182	1	183	251	1	252
March	208	1	209	226	1	227
April	275	2	277	241	2	243
May	359	2	361	338	2	340
June	375	2	377	364	2	366
July	373	2	375	341	2	343
August	374	2	376	398	2	400
September	374	2	376	457	2	459
October	366	2	368	494	2	496
November	246	1	247	337	1	338
December	210	1	211	280	1	281

CHAIRS (13 ESTABLISHMENTS).

January	2,436	312	2,748	2,486	248	2,734
February	2,496	324	2,820	2,726	276	3,002
March	2,516	326	2,842	2,842	287	3,129
April	2,516	324	2,840	2,827	280	3,107
May	2,471	315	2,786	2,913	280	3,193
June	2,468	306	2,774	2,800	271	3,071
July	2,436	296	2,732	2,737	255	2,992
August	2,399	290	2,689	2,818	249	3,067
September	2,456	298	2,754	2,899	281	3,180
October	2,482	297	2,779	2,953	288	3,241
November	2,463	302	2,765	2,983	295	3,278
December	2,444	303	2,747	2,824	279	3,103

STATISTICS OF MANUFACTURES.

577

PERSONS EMPLOYED: BY INDUSTRIES. AGGREGATES BY MONTHS—
1896 AND 1897—Continued.

CHEMICAL PREPARATIONS (13 ESTABLISHMENTS).

Months.	1896.			1897.		
	Males.	Fe- males.	Total.	Males.	Fe- males.	Total.
January	104	22	126	121	18	139
February	109	21	130	118	18	136
March	110	20	130	120	18	138
April	113	24	137	120	20	140
May	116	27	143	123	19	142
June	118	27	145	124	21	145
July	114	27	141	120	23	143
August	117	25	142	122	24	146
September	126	25	151	122	34	156
October	118	27	145	125	36	161
November	111	28	139	120	35	155
December	111	47	158	120	28	148

CIGARS, SNUFF AND TOBACCO (54 ESTABLISHMENTS).

January	603	165	768	658	269	927
February	666	253	919	673	278	951
March	670	253	923	662	276	938
April	670	255	925	657	279	936
May	665	241	906	686	294	980
June	668	253	921	679	299	978
July	665	258	923	659	285	944
August	670	257	927	676	292	968
September	671	260	931	675	290	965
October	671	251	922	670	284	954
November	671	258	929	679	281	960
December	575	170	745	680	280	960

CLOTHING (25 ESTABLISHMENTS).

January	338	1,443	1,781	287	1,294	1,581
February	349	1,472	1,821	296	1,293	1,589
March	357	1,433	1,790	307	1,286	1,593
April	357	1,441	1,798	326	1,278	1,604
May	366	1,392	1,758	330	1,292	1,622
June	368	1,378	1,746	335	1,284	1,619
July	348	1,370	1,718	320	1,297	1,617
August	349	1,359	1,708	326	1,246	1,572
September	345	1,330	1,675	331	1,304	1,635
October	348	1,385	1,733	332	1,367	1,699
November	339	1,357	1,696	326	1,346	1,672
December	336	1,274	1,610	322	1,310	1,632

COAL AND WOOD (28 ESTABLISHMENTS).

January	1,177	4	1,181	1,395	.....	1,395
February	1,120	4	1,124	1,373	.....	1,373
March	1,041	4	1,045	1,280	.....	1,280
April	1,280	4	1,284	1,369	.....	1,369
May	1,588	4	1,592	1,550	.....	1,550
June	1,440	4	1,444	1,567	.....	1,567
July	1,507	4	1,511	1,674	.....	1,674
August	1,492	4	1,496	1,711	.....	1,711
September	1,620	4	1,624	1,679	.....	1,679
October	1,865	4	1,869	2,554	.....	2,554
November	1,788	4	1,792	2,507	.....	2,507
December	1,590	4	1,594	2,449	.....	2,449

PERSONS EMPLOYED: BY INDUSTRIES. AGGREGATES BY MONTHS—
1896 AND 1897—Continued.

CONFECTIONERIES, CRACKERS, ETC. (12 ESTABLISHMENTS).

Months	1896.			1897.		
	Males.	Fe- males.	Total.	Males.	Fe- males.	Total.
January	344	323	667	322	313	635
February	344	324	668	318	326	644
March	346	332	678	336	352	688
April	348	329	677	329	372	701
May	364	327	691	341	379	720
June	369	336	705	351	384	735
July	358	338	696	339	344	683
August	355	334	689	342	360	702
September	358	341	699	356	419	775
October	365	371	736	364	471	835
November	365	374	739	372	497	869
December	365	377	742	358	468	826

COOKING AND HEATING APPARATUS (24 ESTABLISHMENTS.)

January	931	6	937	1,131	6	1,137
February	1,148	11	1,159	1,241	10	1,251
March	1,135	12	1,147	1,240	10	1,250
April	1,134	10	1,144	1,187	8	1,195
May	1,205	10	1,215	1,336	8	1,344
June	1,200	7	1,207	1,283	6	1,289
July	1,105	7	1,112	1,131	6	1,137
August	1,187	7	1,194	1,162	6	1,168
September	1,200	7	1,207	1,214	6	1,220
October	1,214	7	1,221	1,307	6	1,313
November	1,197	7	1,204	1,352	6	1,358
December	1,125	6	1,131	1,295	6	1,301

COOPERAGE (21 ESTABLISHMENTS).

January	676	.....	676	594	.....	594
February	697	.....	697	650	.....	650
March	708	.....	708	668	.....	668
April	702	.....	702	673	.....	673
May	698	.....	698	687	.....	687
June	680	.....	680	680	.....	680
July	644	.....	644	674	.....	674
August	627	.....	627	568	.....	568
September	615	.....	615	543	.....	543
October	626	.....	626	581	.....	581
November	639	.....	639	591	.....	591
December	585	.....	585	613	.....	613

COTTON AND LINEN GOODS (5 ESTABLISHMENTS).

January	240	377	617	202	301	503
February	239	380	619	197	294	491
March	239	379	618	197	296	493
April	202	319	521	235	346	581
May	199	324	523	238	344	582
June	197	317	514	195	293	488
July	194	315	509	112	162	274
August	193	314	507	133	271	454
September	199	318	517	195	284	479
October	206	359	565	195	281	476
November	208	349	557	195	285	480
December	210	346	556	179	266	445

PERSONS EMPLOYED: BY INDUSTRIES. AGGREGATES BY MONTHS—
1896 AND 1897—Continued.

ELECTRICAL AND GAS APPARATUS AND SUPPLIES (21 ESTABLISHMENTS).

Months	1896.			1897.		
	Males.	Fe-males.	Total.	Males.	Fe-males.	Total.
January	951	50	1,001	978	40	1,018
February	966	45	1,011	983	50	1,033
March	1,064	47	1,111	1,034	48	1,082
April	1,070	47	1,117	1,028	52	1,080
May	1,080	50	1,130	1,023	51	1,074
June	1,061	48	1,109	1,026	49	1,075
July	1,057	47	1,104	1,014	39	1,053
August	946	43	989	964	34	998
September	946	42	988	968	42	1,010
October	948	44	992	983	41	1,024
November	922	47	969	979	41	1,020
December	923	47	970	1,025	49	1,074

ELECTRICAL AND GAS LIGHTING, POWER AND STREET RAILWAYS
(49 ESTABLISHMENTS).

January	1,768	8	1,776	1,776	5	1,781
February	1,772	8	1,780	1,759	5	1,764
March	1,768	8	1,776	1,784	5	1,789
April	1,926	8	1,934	1,865	5	1,870
May	2,033	7	2,040	1,993	5	1,998
June	2,067	7	2,074	2,024	5	2,029
July	2,083	7	2,090	2,031	5	2,036
August	2,094	7	2,101	1,998	5	2,003
September	1,969	7	1,976	1,999	5	2,004
October	1,970	7	1,977	2,055	5	2,060
November	1,858	5	1,863	1,910	5	1,915
December	1,697	4	1,701	1,850	5	1,855

FANCY ARTICLES (8 ESTABLISHMENTS).

January	74	12	86	75	12	87
February	75	13	88	82	13	95
March	81	13	94	84	12	96
April	88	13	101	88	11	99
May	82	13	95	97	13	110
June	93	23	116	107	18	125
July	97	20	117	108	16	124
August	99	20	119	118	24	142
September	101	22	123	126	28	154
October	103	22	125	130	28	158
November	107	34	141	128	40	168
December	107	31	138	139	38	177

FLOUR AND FEED (86 ESTABLISHMENTS).

January	1,020	5	1,025	1,103	5	1,108
February	1,104	5	1,109	1,109	5	1,114
March	1,029	5	1,034	1,105	5	1,110
April	1,050	5	1,055	1,125	5	1,130
May	1,120	5	1,125	1,122	5	1,127
June	1,120	6	1,126	1,133	6	1,139
July	1,126	6	1,132	1,132	6	1,141
August	1,105	6	1,111	1,125	6	1,131
September	1,101	6	1,107	1,123	6	1,129
October	1,120	6	1,126	1,160	6	1,166
November	1,107	6	1,113	1,165	6	1,171
December	1,079	6	1,085	1,118	6	1,124

PERSONS EMPLOYED: BY INDUSTRIES. AGGREGATES BY MONTHS—
1896 AND 1897—Continued.

FOOD PREPARATIONS (31 ESTABLISHMENTS).

Months.	1896.			1897.		
	Males.	Fe- males.	Total.	Males.	Fe males.	Total.
January	1,656	110	1,766	1,710	111	1,821
February	1,557	121	1,678	1,613	122	1,735
March	1,502	97	1,599	1,500	127	1,627
April	1,424	101	1,525	1,387	130	1,517
May	1,474	104	1,578	1,419	131	1,550
June	2,101	367	2,468	1,452	141	1,593
July	2,152	479	2,631	2,269	892	3,161
August	1,948	432	2,380	2,392	1,215	3,607
September	1,656	260	1,916	2,000	945	2,945
October	1,630	144	1,774	1,836	376	2,212
November	1,548	150	1,698	1,646	137	1,783
December	1,635	123	1,758	1,742	121	1,863

FURNITURE (42 ESTABLISHMENTS).

January	2,634	54	2,688	2,176	29	2,205
February	2,726	55	2,781	2,305	29	2,334
March	2,920	64	2,984	2,514	34	2,548
April	2,889	64	2,953	2,599	36	2,635
May	2,648	66	2,714	2,470	36	2,506
June	2,546	66	2,612	2,328	34	2,362
July	2,268	59	2,327	2,032	29	2,061
August	2,255	62	2,317	2,239	30	2,269
September	2,471	71	2,542	2,506	38	2,544
October	2,456	65	2,521	2,551	39	2,590
November	3,452	59	3,511	2,615	36	2,651
December	2,516	56	2,572	2,557	31	2,588

FURS, GLOVES AND MITTENS (11 ESTABLISHMENTS).

January	162	155	317	105	122	227
February	164	157	321	104	122	226
March	167	171	338	106	133	239
April	171	192	363	112	159	271
May	172	223	395	114	183	297
June	174	221	395	116	192	308
July	174	234	408	118	200	318
August	173	249	422	117	210	327
September	171	252	423	116	214	330
October	163	255	418	112	216	328
November	153	189	342	110	170	280
December	144	148	292	110	152	262

GRAIN AND WAREHOUSE MEN (12 ESTABLISHMENTS).

January	164	1	165	151	.....	151
February	147	1	148	163	.....	163
March	149	1	150	162	.....	162
April	140	1	141	155	.....	155
May	146	1	147	172	.....	172
June	141	.....	141	166	.....	166
July	132	.....	132	154	.....	154
August	133	.....	133	171	.....	171
September	136	.....	136	219	.....	219
October	149	.....	149	223	.....	223
November	208	1	209	259	.....	259
December	155	1	156	179	.....	179

PERSONS EMPLOYED: BY INDUSTRIES. AGGREGATES BY MONTHS—
1896 AND 1897—Continued.

IRON GOODS—MALLEABLE—(25 ESTABLISHMENTS).

Months	1896.			1897.		
	Males.	Fe- males.	Total.	Ma.es.	Fe- males.	Total.
January	3,260	.....	3,260	2,791	15	2,806
February	3,410	.....	3,410	3,357	8	3,365
March	3,360	.....	3,360	3,309	10	3,319
April	3,416	.....	3,416	3,191	11	3,202
May	3,567	.....	3,567	3,060	12	3,072
June	3,517	.....	3,517	3,342	12	3,354
July	3,087	.....	3,087	2,579	15	2,594
August	3,198	.....	3,198	3,233	23	3,256
September	3,069	.....	3,069	3,655	23	3,678
October	3,420	.....	3,420	4,054	23	4,077
November	3,380	.....	3,380	3,857	27	3,884
December	3,096	.....	3,096	3,572	19	3,591

IRON—PIG—(2 ESTABLISHMENTS).

January	159	.....	159	179	.....	179
February	161	.....	161	188	.....	188
March	162	.....	162	180	.....	180
April	171	.....	171	89	.....	89
May	116	.....	116	93	.....	93
June	96	.....	96	113	.....	113
July	93	.....	93	92	.....	92
August	93	.....	93	121	.....	121
September	85	.....	85	140	.....	140
October	87	.....	87	158	.....	158
November	85	.....	85	160	.....	160
December	87	.....	87	212	.....	212

KNIT GOODS (15 ESTABLISHMENTS).

January	241	1,179	1,420	300	1,066	1,366
February	267	1,166	1,433	301	1,170	1,471
March	244	1,265	1,509	316	1,277	1,593
April	256	1,781	2,037	323	1,362	1,685
May	261	1,416	1,677	331	1,443	1,774
June	259	1,414	1,673	329	1,490	1,819
July	264	1,405	1,669	346	1,552	1,898
August	260	1,295	1,555	344	1,590	1,934
September	287	1,394	1,681	345	1,569	1,914
October	260	1,355	1,615	344	1,544	1,888
November	254	1,330	1,584	340	1,528	1,868
December	272	1,142	1,414	334	1,472	1,806

LAGER BEER (71 ESTABLISHMENTS).

January	2,709	364	3,073	2,796	219	3,015
February	2,719	381	3,100	2,775	209	2,984
March	2,760	390	3,150	2,794	219	3,013
April	2,735	348	3,083	2,838	234	3,072
May	2,790	342	3,132	2,876	269	3,145
June	2,818	347	3,165	2,886	269	3,155
July	2,872	350	3,222	2,960	270	3,230
August	2,881	353	3,234	2,885	270	3,155
September	2,870	322	3,192	2,856	265	3,121
October	2,837	271	3,108	2,843	255	3,098
November	2,823	261	3,084	2,844	219	3,063
December	2,901	255	3,156	3,033	214	3,247

PERSONS EMPLOYED: BY INDUSTRIES. AGGREGATES BY MONTHS—
1896 AND 1897—Continued.

LAUNDRIES (75 ESTABLISHMENTS).

Months	1896.			1897.		
	Males.	Fe- males.	Total.	Males.	Fe- males.	Total.
January	114	531	645	179	524	703
February	192	526	718	179	521	700
March	198	532	730	189	535	724
April	200	553	753	192	558	750
May	201	571	772	196	587	783
June	208	614	822	202	613	815
July	196	587	783	205	650	855
August	213	658	871	207	657	864
September	214	625	839	211	629	840
October	191	585	776	209	596	805
November	208	557	765	207	577	784
December	124	544	668	203	570	773

LEATHER (33 ESTABLISHMENTS).

January	3,839	236	4,075	3,936	265	4,201
February	3,858	238	4,096	4,072	267	4,339
March	3,837	238	4,075	4,119	267	4,386
April	4,104	41	4,145	4,156	269	4,425
May	4,178	248	4,426	4,768	278	5,046
June	4,218	247	4,465	4,937	275	5,212
July	4,519	244	4,763	5,055	274	5,329
August	4,294	245	4,539	4,487	275	4,762
September	4,223	246	4,469	4,555	276	4,831
October	4,150	253	4,403	4,676	281	4,957
November	4,065	252	4,317	4,596	281	4,877
December	4,063	250	4,313	4,400	280	4,689

LITHOGRAPHING AND ENGRAVING (7 ESTABLISHMENTS).

January	403	37	440	402	29	431
February	405	36	441	401	30	431
March	400	35	435	405	32	437
April	406	35	441	410	32	442
May	404	35	439	410	32	442
June	401	35	436	410	31	441
July	397	35	432	405	34	439
August	399	35	434	409	35	444
September	405	36	441	410	32	442
October	406	36	442	418	31	449
November	399	36	435	412	33	445
December	397	37	434	405	35	440

LUMBER, LATH AND SHINGLES (168 ESTABLISHMENTS).

January	7,954	34	7,988	5,167	28	5,195
February	8,394	34	8,428	5,825	28	5,853
March	8,379	48	8,427	6,861	33	6,894
April	12,737	74	12,811	12,563	67	12,630
May	15,347	116	15,463	15,820	74	15,894
June	16,093	116	16,209	16,686	87	16,773
July	16,188	131	16,319	16,280	99	16,379
August	14,993	142	15,135	15,933	99	16,032
September	12,699	82	12,781	15,514	82	15,596
October	10,421	67	10,488	14,237	80	14,317
November	8,117	26	8,143	10,331	54	10,385
December	6,292	21	6,313	5,927	29	5,956

PERSONS EMPLOYED: BY INDUSTRIES. AGGREGATES BY MONTHS—
1896 AND 1897—Continued.

MALT (20 ESTABLISHMENTS).

Months.	1896.			1897.		
	Males.	Fe- males.	Total.	Males.	Fe- males.	Total.
January	558	.....	558	567	.....	567
February	578	.....	578	578	.....	578
March	559	.....	559	560	.....	560
April	553	.....	553	562	.....	562
May	537	.....	537	566	.....	566
June	476	.....	476	513	.....	513
July	368	.....	368	367	.....	367
August	403	.....	403	363	.....	363
September	412	.....	412	423	.....	423
October	512	.....	512	542	.....	542
November	557	.....	557	574	.....	574
December	552	.....	552	567	.....	567

MACHINES AND MACHINERY (86 ESTABLISHMENTS).

January	4,609	15	4,624	4,184	17	4,201
February	4,386	15	4,401	4,320	18	4,338
March	4,638	15	4,653	4,453	17	4,470
April	4,693	15	4,708	4,486	17	4,503
May	4,530	15	4,545	4,438	18	4,456
June	4,360	15	4,375	4,464	18	4,482
July	4,314	16	4,330	4,613	19	4,632
August	4,316	16	4,332	4,661	19	4,680
September	4,147	16	4,163	4,688	18	4,706
October	4,022	16	4,038	4,585	18	4,553
November	3,828	15	3,843	4,434	17	4,451
December	3,778	14	3,792	4,346	17	4,363

MIXED TEXTILES (9 ESTABLISHMENTS).

January	159	210	369	146	183	329
February	154	193	347	142	175	317
March	154	190	344	146	177	323
April	161	321	482	155	208	363
May	156	217	373	158	216	374
June	156	221	377	159	217	376
July	156	185	341	152	174	326
August	160	186	346	153	174	327
September	163	200	363	159	202	361
October	166	209	375	164	208	372
November	163	200	363	162	199	361
December	163	181	344	153	191	344

OFFICE AND SALOON FIXTURES, ETC. (15 ESTABLISHMENTS).

January	576	.....	576	449	.....	449
February	537	.....	537	435	.....	435
March	486	.....	486	422	.....	422
April	594	.....	594	496	.....	496
May	638	.....	638	540	.....	540
June	677	.....	677	578	.....	578
July	674	.....	674	584	.....	584
August	727	.....	727	617	.....	617
September	719	.....	719	623	.....	623
October	713	.....	713	642	.....	642
November	674	.....	674	680	.....	680
December	555	.....	555	626	.....	626

PERSONS EMPLOYED: BY INDUSTRIES. AGGREGATES BY MONTHS—
1896 AND 1897—Continued.

PAINTS, OILS, AND CRUDE CHEMICALS (7 ESTABLISHMENTS).

Months	1896			1897.		
	Males.	Fe- males.	Total.	Males.	Fe- males.	Total.
January	129	1	130	142	1	143
February	129	1	130	142	1	143
March	129	1	130	142	1	143
April	132	1	133	145	1	146
May	132	1	133	145	1	146
June	128	1	129	129	1	130
July	109	1	110	129	1	130
August	87	1	88	125	1	126
September	105	1	106	143	1	144
October	102	1	103	140	1	141
November	117	1	118	140	1	141
December	111	1	112	138	1	139

PAPER AND PULP (34 ESTABLISHMENTS).

January	2,400	680	3,080	2,430	620	3,050
February	2,452	704	3,156	2,452	624	3,076
March	2,604	757	3,361	2,646	628	3,274
April	2,653	704	3,357	2,589	633	3,222
May	2,727	678	3,405	2,628	636	3,264
June	2,643	659	3,302	2,549	625	3,174
July	2,453	486	2,939	2,426	637	3,063
August	2,364	502	2,866	2,289	604	2,893
September	2,270	504	2,774	2,401	603	3,004
October	2,551	646	3,197	2,615	629	3,244
November	2,613	651	3,264	2,646	665	3,311
December	2,699	647	3,346	2,602	647	3,249

PRINTERS' SUPPLIES (4 ESTABLISHMENTS).

January	167	6	173	184	6	190
February	178	6	184	185	6	191
March	188	6	194	189	10	199
April	188	6	194	189	6	195
May	179	6	185	183	6	189
June	177	6	183	183	6	189
July	182	6	188	183	6	189
August	181	6	187	183	6	189
September	180	6	186	183	6	189
October	178	6	184	181	6	187
November	182	6	188	182	6	188
December	184	6	190	182	6	188

RAILROAD EQUIPMENT (20 ESTABLISHMENTS).

January	5,378	7	5,385	9,597	5	9,602
February	5,493	7	5,500	9,639	5	9,644
March	5,419	6	5,425	9,557	5	9,562
April	5,464	7	5,471	9,616	5	9,621
May	5,350	7	5,357	9,544	5	9,549
June	5,249	7	5,256	9,478	5	9,483
July	5,141	7	5,148	9,580	5	9,585
August	5,130	7	5,137	9,762	5	9,767
September	5,164	7	5,171	10,119	5	10,124
October	5,150	7	5,157	10,106	5	10,111
November	5,045	7	5,052	10,103	5	10,108
December	4,888	7	4,895	10,040	5	10,045

PERSONS EMPLOYED: BY INDUSTRIES. AGGREGATES BY MONTHS—
1896 AND 1897—Continued.

SADDLERY, HARNESS, ETC. (9 ESTABLISHMENTS).

Months	1896.			1897.		
	Males.	Fe- males.	Total.	Males.	Fe- males.	Total.
January	115	33	148	155	39	194
February	122	25	147	163	30	193
March	148	38	186	184	45	229
April	151	42	193	194	47	241
May	156	34	190	194	38	232
June	138	30	168	180	32	212
July	137	27	164	184	35	219
August	125	6	131	185	25	210
September	125	6	131	192	9	201
October	135	16	151	199	20	219
November	128	18	146	189	21	210
December	132	29	161	186	32	218

SASH, DOORS, BLINDS, ETC. (73 ESTABLISHMENTS).

January	2,681	35	2,716	3,496	38	3,534
February	2,800	35	2,835	2,748	40	2,788
March	2,922	35	2,957	2,979	40	3,019
April	3,418	39	3,457	3,519	44	3,563
May	3,543	43	3,586	3,643	43	3,686
June	3,545	39	3,584	3,840	44	3,884
July	3,646	40	3,686	3,856	46	3,902
August	3,397	40	3,437	3,638	45	3,683
September	3,221	35	3,256	3,614	40	3,654
October	3,107	35	3,142	3,559	39	3,598
November	3,017	33	3,050	3,471	38	3,509
December	2,749	34	2,783	3,236	38	3,274

SHEET METAL GOODS (26 ESTABLISHMENTS).

January	1,256	211	1,467	1,492	341	1,833
February	1,322	223	1,545	1,577	359	1,936
March	1,286	220	1,506	1,584	353	1,937
April	1,332	221	1,553	1,626	356	1,982
May	1,330	212	1,542	1,669	358	2,027
June	1,340	211	1,551	1,779	356	2,135
July	1,351	213	1,564	1,688	353	2,041
August	1,373	219	1,592	1,755	361	2,116
September	1,426	221	1,647	1,794	372	2,166
October	1,397	236	1,633	1,799	373	2,172
November	1,383	237	1,620	1,740	377	2,117
December	1,301	208	1,509	1,670	368	2,038

SHIP BUILDING (6 ESTABLISHMENTS).

January	1,008	2	1,010	845	1	846
February	1,204	2	1,206	804	1	805
March	1,339	2	1,341	863	1	864
April	1,264	2	1,266	937	2	939
May	1,461	2	1,463	790	3	793
June	1,364	2	1,366	394	2	396
July	1,110	4	1,114	363	2	365
August	818	3	821	431	3	434
September	382	3	385	308	2	310
October	474	2	476	442	1	443
November	433	1	434	431	.....	431
December	636	2	638	337	.....	337

PERSONS EMPLOYED: BY INDUSTRIES. AGGREGATES BY MONTHS—
1896 AND 1897—Continued.

SOAP, LYE AND POTASH (9 ESTABLISHMENTS).

Months.	1896.			1897.		
	Males.	Fe- males.	Total.	Males.	Fe- males.	Total.
January	98	40	138	106	46	152
February	97	39	136	108	45	153
March	100	42	142	112	47	159
April	96	36	132	120	49	169
May	97	38	135	118	48	166
June	95	38	133	112	54	166
July	92	39	131	114	54	168
August	91	35	126	121	51	172
September	91	35	126	122	48	170
October	93	36	129	124	49	173
November	95	37	132	120	47	167
December	96	37	133	117	46	163

STAVES AND HEADING (21 ESTABLISHMENTS).

January	434	.....	434	545	.....	545
February	561	.....	561	629	.....	629
March	556	.....	556	684	.....	684
April	575	.....	575	695	.....	695
May	511	.....	511	598	.....	598
June	488	.....	488	535	.....	535
July	415	.....	415	461	.....	461
August	353	.....	353	428	.....	428
September	383	.....	383	407	.....	407
October	316	.....	316	375	.....	375
November	347	.....	347	426	.....	426
December	361	.....	361	474	.....	474

STONE (MARBLE, GRANITE, ETC. (10 ESTABLISHMENTS).

January	103	.....	103	116	.....	116
February	116	.....	116	121	.....	121
March	131	.....	131	132	.....	132
April	158	.....	158	175	.....	175
May	213	.....	213	194	.....	194
June	233	.....	233	210	.....	210
July	215	.....	215	241	.....	241
August	218	.....	218	229	.....	229
September	205	.....	205	223	.....	223
October	151	.....	151	195	.....	195
November	163	.....	163	194	.....	194
December	166	.....	166	158	.....	158

STRAW GOODS (5 ESTABLISHMENTS).

January	280	370	650	242	319	561
February	275	370	645	255	321	576
March	327	520	847	300	466	766
April	329	520	849	312	462	774
May	327	503	830	331	486	817
June	226	253	479	261	227	488
July	195	213	408	227	116	343
August	197	213	410	237	122	359
September	200	213	413	271	146	417
October	216	223	439	297	163	460
November	296	373	669	308	222	530
December	283	353	636	290	286	576

PERSONS EMPLOYED: BY INDUSTRIES. AGGREGATES BY MONTHS—
1896 AND 1897—Continued.

TOYS AND GAMES (5 ESTABLISHMENTS).

Months	1896.			1897.		
	Males.	Fe- males.	Total.	Males.	Fe- males.	Total.
January	165	15	180	172	14	186
February	196	17	213	182	18	200
March	165	19	184	176	16	192
April	198	10	208	175	11	186
May	203	12	215	181	10	191
June	227	16	243	208	15	223
July	235	24	259	220	17	237
August	248	47	295	257	29	286
September	259	49	308	277	33	310
October	248	44	292	286	47	333
November	258	37	295	307	47	354
December	247	32	279	301	36	337

TRUNKS, VALISES, ETC. (9 ESTABLISHMENTS).

January	572	44	616	581	50	631
February	569	46	615	592	51	643
March	561	45	606	574	48	622
April	561	44	605	567	50	617
May	557	32	589	591	56	647
June	566	33	599	600	57	657
July	581	39	620	616	63	679
August	600	46	646	638	64	702
September	586	45	631	636	67	703
October	536	28	564	619	62	681
November	446	32	478	468	46	514
December	446	32	478	472	49	521

VENEER (9 ESTABLISHMENTS).

January	258	1	259	331	.....	331
February	280	1	281	359	.....	359
March	297	1	298	368	.....	368
April	323	1	324	381	.....	381
May	317	1	318	374	.....	374
June	316	1	317	378	.....	378
July	342	1	343	426	.....	426
August	323	1	324	494	.....	494
September	313	1	314	425	.....	425
October	292	1	293	389	.....	389
November	227	1	228	344	.....	344
December	228	1	229	351	.....	351

WAGONS, CARRIAGES AND SLEIGHS (53 ESTABLISHMENTS).

January	2,079	41	2,120	2,156	42	2,198
February	2,157	42	2,199	2,151	42	2,193
March	2,260	45	2,305	2,234	42	2,276
April	2,239	46	2,285	2,311	44	2,355
May	2,381	54	2,435	2,423	44	2,467
June	2,370	64	2,434	2,455	45	2,500
July	2,322	59	2,381	2,545	43	2,588
August	2,036	43	2,079	2,407	35	2,442
September	1,732	42	1,774	2,322	32	2,354
October	1,789	31	1,820	2,264	30	2,294
November	1,559	32	1,591	2,320	32	2,352
December	1,535	32	1,567	2,395	37	2,432

PERSONS EMPLOYED: BY INDUSTRIES. AGGREGATES BY MONTHS—
1896 AND 1897—Continued.

WOODENWARE (11 ESTABLISHMENTS).

Months	1896			1897.		
	Males.	Fe- males.	Tota..	Males.	Fe- males.	Total.
January	1,583	5	1,588	1,172	.....	1,172
February	1,597	5	1,602	1,273	.....	1,273
March	1,582	5	1,587	1,413	.....	1,413
April	1,606	5	1,611	1,365	.....	1,365
May	1,608	5	1,613	1,369	.....	1,369
June	1,639	5	1,644	1,379	.....	1,379
July	1,628	5	1,633	1,330	.....	1,330
August	1,622	5	1,627	1,314	.....	1,314
September	1,602	5	1,607	1,272	.....	1,272
October	1,609	5	1,614	1,257	1	1,258
November	1,607	5	1,612	1,377	1	1,378
December	1,599	5	1,604	1,367	1	1,368

WOOLEN AND WORSTED GOODS (17 ESTABLISHMENTS).

January	399	607	1,006	364	543	907
February	366	567	933	396	567	963
March	362	552	914	441	625	1,066
April	412	622	1,034	464	641	1,105
May	367	542	909	488	647	1,135
June	357	540	897	493	652	1,145
July	329	480	809	497	659	1,156
August	404	587	991	462	608	1,070
September	343	468	811	430	553	983
October	326	461	787	417	546	963
November	279	379	658	439	572	1,011
December	335	515	850	448	628	1,076

MISCELLANEOUS (13 ESTABLISHMENTS).

January	226	165	391	210	168	378
February	232	172	404	207	171	378
March	223	173	395	209	173	382
April	222	173	395	210	176	386
May	216	167	383	210	175	385
June	220	167	387	211	173	384
July	212	169	381	209	170	379
August	213	171	384	203	174	377
September	212	167	379	204	177	381
October	219	173	392	204	177	381
November	215	172	387	201	175	376
December	211	168	379	203	170	373

ALL INDUSTRIES (1,499 ESTABLISHMENTS).

January	65,965	9,049	75,014	66,992	8,554	75,546
February	67,895	9,179	77,074	68,967	8,794	77,760
March	68,655	9,579	78,234	71,252	9,246	80,498
April	74,590	9,965	84,465	77,959	9,524	87,483
May	77,872	9,569	87,441	82,573	9,749	92,322
June	78,332	9,579	87,911	83,232	9,500	92,732
July	76,993	9,333	86,326	82,315	10,015	92,330
August	74,191	9,354	83,545	82,131	10,436	92,567
September	70,254	9,099	79,353	82,383	10,295	92,678
October	68,335	9,116	77,451	83,147	9,826	92,973
November	65,806	8,933	74,739	78,657	9,561	88,218
December	62,174	8,626	70,800	73,805	9,454	83,259

WAGES PAID—BY INDUSTRIES.

1896 AND 1897.

By "Total amount paid in wages" is meant the combined amount paid by the 1,499 establishments for that purpose in each year. Comparisons are made between the two years, and the relative increase or decrease is noted by amount and percentages. Wage earners only are considered; officers, clerks and other salaried persons are not included.

INDUSTRIES.	No. of establishments.	TOTAL AMOUNT OF WAGES PAID DURING YEAR.		INCREASE (+) OR DECREASE (-) IN 1897.	
		1896.	1897.	Amount.	Per cent.
Agricultural implements	31	\$999,822	\$938,930 -	\$60,892	- 6.09
Artisans' tools and hardware specialties	10	170,303	182,604 +	12,300+	7.22
Beverages (not spirituous, soft drinks).	18	82,665	93,072 +	10,407+	12.53
Bicycles, tricycles, etc.	7	306,808	325,609 +	18,804+	6.12
Boots and shoes	24	622,611	686,972 +	64,361+	10.33
Boxes (wooden and paper).....	29	336,175	404,765 +	68,590 +	20.40
Brick, tile and sewer pipe.....	23	79,028	79,627 +	599	+ 0.75
Brooms, brushes and baskets	19	54,895	62,384 +	7,489 +	13.64
Burial cases, caskets and coffins.....	4	98,540	109,629 +	11,089 +	11.25
Cement, lime, plaster, etc.....	12	148,012	147,190 -	822	- 0.55
Chairs	13	772,212	892,360 +	120,148 +	15.55
Chemical preparations	13	86,961	100,211 +	13,250 +	15.23
Cigars, snuff and tobacco.....	54	411,006	441,261 +	30,255 +	7.36
Clothing	25	502,569	532,238 +	29,669 +	5.90
Coal and wood	28	663,258	879,412 +	216,154 +	32.58
Confectioneries, crackers, etc.....	12	293,465	262,890 +	29,425 +	12.60
Cooking and heating apparatus.....	24	416,931	458,670 +	41,739 +	10.01
Cooperage	21	226,766	213,079 -	13,687 -	6.03
Cotton and linen goods	5	111,746	117,219 +	5,478 +	4.90
Electrical and gas apparatus and supplies	21	486,288	497,164 +	10,876 +	2.23
Electric and gas lighting, power and street railways	49	1,094,016	1,220,541 +	126,525 +	11.56
Fancy articles	8	33,933	41,575 +	7,642 +	22.52
Flour and feed	86	547,830	586,731 +	38,901 +	6.73
Food preparations	31	852,282	898,879 +	46,597 +	5.46
Furniture	42	794,964	727,752 -	67,212 -	8.45
Furs, gloves and mittens	11	125,843	91,034 -	34,809 -	27.66
Grain and warehouse men.....	12	91,487	105,810 +	14,323 +	15.65
Iron goods (malleable).....	25	1,484,112	1,518,760 +	34,648 +	2.33
Iron (pig)	2	44,251	52,807 +	8,556 +	19.33
Knit goods	15	324,212	399,430 +	75,218 +	23.20
Lager beer	71	1,649,640	1,686,468 +	36,828 +	2.23
Laundries	75	219,168	231,775 +	12,607 +	5.75
Leather	33	1,790,571	2,028,342 +	237,771 +	13.28
Lithographing and engraving	7	206,844	222,156 +	15,312 +	7.40
Lumber, lath and shingles	168	3,904,245	4,566,264 +	662,019 +	16.95
Malt	20	286,966	296,437 +	9,471 +	3.30
Machines and machinery	86	2,195,742	2,343,671 +	147,929 +	6.73
Mixed textiles	9	80,851	77,205 -	3,646 -	4.50
Office and saloon fixtures, etc.....	15	258,154	229,011 -	29,143 -	11.28
Paints, oils and crude chemicals.....	7	76,304	80,128 +	3,824 +	5.01
Paper and pulp	34	1,243,243	1,240,476 -	2,767 -	- 0.22
Printers' supplies	4	69,532	71,751 -	2,219 -	- 3.19
Railroad equipment	20	2,951,851	5,603,289 +	2,651,438 +	89.82
Saddlery, harness, etc.....	9	54,734	82,136 +	27,402 +	50.06
Sash, doors, blinds, etc.....	73	1,086,510	1,159,449 +	72,939 +	6.71
Sheet metal goods	26	562,140	621,091 +	58,951 +	10.48

WAGES PAID—BY INDUSTRIES—Continued.

1896 AND 1897.

By "Total amount paid in wages" is meant the combined amount paid by the 1499 establishments for that purpose in each year. Comparisons are made between the two years, and the relative increase or decrease is noted by amount and percentages. Wage owners only are considered; officers, clerks and other salaried persons are not included.

INDUSTRIES.	No. of establishments.	TOTAL AMOUNT OF WAGES PAID DURING YEAR.		INCREASE (+) OR DECREASE (-) IN 1896.	
		1896.	1897.	Amount.	Per cent.
Ship and boat building	6	507,701	262,605 -	245,096	-48.26
Soap, lye, potash, etc.....	9	50,186	71,700 +	21,514	+ 42.86
Staves and heading	21	116,035	156,852 +	40,817	+ 35.17
Stone (marble, granite, etc.).....	10	79,783	83,756 +	3,973	+ 4.97
Straw goods	5	210,942	191,874 -	19,068	- 9.03
Toys and games	5	64,468	68,676 +	4,208	+ 6.54
Trunks, valises, etc.....	9	181,359	203,931 +	22,572	+ 12.44
Veneer	9	87,088	119,510 +	32,422	+ 37.23
Wagons, carriages and sleighs.....	53	736,689	951,241 +	214,552	+ 29.12
Woodenware	11	513,206	421,260 -	91,946	-17.91
Woolen and worsted goods.....	17	234,685	310,176 +	75,491	+ 32.16
Miscellaneous	13	128,194	133,209 +	5,015	+ 3.91
All industries	1499	\$31,749,822	\$36,583,044 +	\$4,833,222	+ 15.22

AVERAGE YEARLY EARNINGS—BY INDUSTRIES.

1896 AND 1897.

The average yearly earnings in the different industries, shown in the following table, have been obtained by dividing the total amount paid in wages in each industry by the average number of persons employed therein. Comparison is made between the two years, and the relative increase or decrease is noted by amount and percentages. Wage earners only are considered; officers, clerks and other salaried persons are not included.

INDUSTRIES.	No. of establishments.	AVERAGE YEARLY EARNINGS.		INCREASE (+) OR DECREASE (-) IN 1897.	
		1896.	1897.	Amounts.	Per cent
Agricultural implements	31	\$538.70	\$503.18 -	\$35.52 -	6.59
Artisans' tools and hardware specialtie.	10	474.38	412.20 -	62.18 -	15.08
Beverages (not spirituous, soft drinks).	18	444.43	456.23 +	11.80 +	2.65
Bicycles, tricycles, etc.....	7	453.19	494.97 +	41.78 +	9.21
Boots and shoes.....	24	278.07	298.81 +	20.74 +	7.46
Boxes (wooden and paper).....	29	281.32	302.97 +	21.65 +	7.70
Brick, tile and sewer pipe.....	23	284.27	284.38 +	.11 +	.03
Brooms, brushes, baskets.....	19	290.45	301.87 +	11.42 +	3.96
Burial cases, caskets, coffins, etc.....	4	328.46	350.25 +	21.79 +	6.63
Cement, lime, plaster, etc.....	12	500.04	448.75 -	51.29 -	10.25
Chairs	13	278.27	288.70 +	10.43 +	3.74
Chemical preparations	13	621.15	686.38 +	65.23 +	10.50
Cigars, snuff and tobacco.....	54	459.22	462.05 +	2.83 +	0.61
Clothing	25	290.16	328.54 +	38.38 +	13.22
Coal and wood	28	453.35	499.95 +	46.60 +	10.27
Confectioneries, crackers, etc.....	12	334.00	358.16 +	24.16 +	7.23
Cooking and heating apparatus.....	24	360.36	367.82 +	7.46 +	2.07
Cooperage	21	344.63	339.84 -	4.79 -	1.38
Cotton and linen goods.....	5	202.44	244.71 +	42.27 +	20.88
Electrical and gas apparatus and supplies	21	467.13	475.75 +	8.62 +	1.84
Electrical and gas lighting power and street railways	49	587.87	631.75 +	43.88 +	7.46
Fancy articles	8	302.97	324.80 +	21.83 +	7.20
Flour and feed.....	86	500.30	518.31 +	18.01 +	3.59
Food preparations	31	430.23	424.40 -	5.83 -	1.35
Furniture	42	293.35	298.14 +	4.79 +	1.63
Furs, gloves and mittens.....	11	341.04	320.54 -	20.50 -	6.01
Grain and warehouse men.....	12	603.25	584.58 -	18.67 -	3.09
Iron goods (malleable).....	25	447.69	453.36 +	5.67 +	1.26
Iron (pig)	2	381.48	366.72 -	14.76 -	3.86
Knit goods	15	202.00	228.11 +	26.11 +	12.43
Lager beer	71	526.54	542.62 +	16.08 +	3.05
Laundries	75	288.00	296.01 +	8.01 +	2.78
Leather	33	412.57	426.66 +	14.09 +	3.41
Lithographing and engraving.....	7	473.00	504.90 +	31.90 +	6.74
Lumber, lath and shingles.....	168	338.26	386.09 +	47.83 +	14.14
Malt	20	568.25	576.71 +	8.46 +	1.49
Machine and machinery.....	86	508.63	522.44 +	13.81 +	2.71
Mixed textiles	9	219.70	221.85 +	2.15 +	0.98
Office and saloon fixtures, etc.....	15	409.77	410.41 +	.64 +	0.15
Paints, oils and crude chemicals.....	7	518.00	576.46 +	58.46 +	11.28
Paper and pulp	34	398.85	393.71 -	5.14 -	1.30
Printers' supplies	4	373.83	377.64 +	3.81 +	1.01
Railroad equipment	20	562.68	564.11 +	1.43 +	0.25
Saddlery, harness, etc.....	9	344.24	382.03 +	37.79 +	10.97
Sash, doors, blinds, etc.....	73	338.79	330.61 -	8.18 -	2.41

AVERAGE YEARLY EARNINGS—BY INDUSTRIES—Continued.

1896 AND 1897.

The average yearly earnings in the different industries, shown in the following table, have been obtained by dividing the total amount paid in wages in each industry by the average number of persons employed therein. Comparison is made between the two years, and the relative increase or decrease is noted by amount and percentages. Wage earners only are considered; officers, clerks and other salaried persons are not included.

INDUSTRIES.	No. of estab- lishments.	AVERAGE YEARLY EARNINGS.		INCREASE (+) OR DECREASE (-) IN 1897.	
		1896.	1897.	Amounts.	Per ce
Sheet metal goods	26	360.11	304.15	- 55.96	-15.53
Ship and boat building.....	6	528.85	422.19	- 106.66	-20.16
Soap, lye, potash, etc.....	9	377.34	434.54	+ 57.20	+ 15.13
Staves and heading	21	267.67	301.06	+ 33.39	+ 8.85
Stone (marble, granite, etc.).....	10	461.17	460.19	- .98	- 0.21
Straw goods.....	5	348.09	345.72	- 2.37	- 0.68
Toys and games	5	259.95	271.44	+ 11.49	+ 4.42
Trunks, valises, etc.....	9	308.96	321.15	+ 12.19	+ 3.94
Veneer	9	296.22	310.42	+ 14.20	+ 4.78
Wagons, carriages and sleighs	53	353.50	401.37	+ 47.87	+ 13.54
Woodenware	11	318.51	318.17	- .34	- .10
Woolen and worsted goods	17	265.98	295.97	+ 29.99	+ 11.27
Miscellaneous	13	330.40	350.55	+ 20.15	+ 6.09
All industries	1499	\$386.63	\$416.79	+ \$30.16	+ 7.80

CLASSIFIED WEEKLY EARNINGS: BY INDUSTRIES.

1896 AND 1897.

The tables following show a classification of the weekly wages in the different industries, ranging from \$25.00 and over per week down to \$1.50 or less, and is arranged by sex and age periods. The classifications apply to wage earners only; officers, clerks and other salaried persons are not included.

AGRICULTURAL IMPLEMENTS (31 ESTABLISHMENTS).

Classification of weekly wages.	1896.				1897.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per week and over.....	29				16			
20.00 but under \$25.00.....	71				17			
18.00 but under 20.00.....	36				32			
15.00 but under 18.00.....	127				98			
13.00 but under 15.00.....	112				189			
12.00 but under 13.00.....	285				225			
11.00 but under 12.00.....	73				147			
10.00 but under 11.00.....	136				142			
9.00 but under 10.00.....	408				417			
8.00 but under 9.00.....	102				195			
7.00 but under 8.00.....	418				363			
6.00 but under 7.00.....	261		5	1	164	1	62	
5.50 but under 6.00.....	21	1			10		3	
5.00 but under 5.50.....	11		1		9		14	
4.50 but under 5.00.....	78		2		32		34	
4.00 but under 4.50.....	19		3		1		14	
3.50 but under 4.00.....	36		5		36		20	
3.00 but under 3.50.....	27		5		1		19	
2.50 but under 3.00.....	4						3	
2.00 but under 2.50.....	2		3	1			2	
1.50 but under 2.00.....	1							
Under \$1.50.....			1					
Totals.....	2,257	1	25	2	2,058	1	171	

ARTISANS' TOOLS AND HARDWARE SPECIALTIES (10 ESTABLISHMENTS).

\$25.00 per week and over.....	2							
20.00 but under \$25.00.....	1				3			
18.00 but under 20.00.....	4				12			
15.00 but under 18.00.....	26				55			
13.00 but under 15.00.....	34				64			
12.00 but under 13.00.....	25				31			
11.00 but under 12.00.....	2				12			
10.00 but under 11.00.....	23				36			
9.00 but under 10.00.....	27				36			
8.00 but under 9.00.....	15				13			
7.00 but under 8.00.....	41				70			
6.00 but under 7.00.....	49				136			
5.50 but under 6.00.....	6				1		9	
5.00 but under 5.50.....	14				10		27	
4.50 but under 5.00.....	17		1		3		40	
4.00 but under 4.50.....	17		2				47	
3.50 but under 4.00.....	14		7				28	
3.00 but under 3.50.....	21		3				57	
2.50 but under 3.00.....	7		5				40	
2.00 but under 2.50.....	16						7	
1.50 but under 2.00.....			5					
Under \$1.50.....								
Totals.....	361		23		482		255	

CLASSIFIED WEEKLY WAGES BY INDUSTRIES—Continued.

BEVERAGES (NOT SPIRITUOUS—SOFT DRINKS)
(18 ESTABLISHMENTS).

Classification of weekly wages.	1896.				1897.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per week and over...	2				1			
20.00 but under \$25.00.....	1				2			
18.00 but under 20.00.....	15				11			
15.00 but under 18.00.....	13				5			
13.00 but under 15.00.....	12				16			
12.00 but under 13.00.....	13				23			
11.00 but under 12.00.....	18				10			
10.00 but under 11.00.....	18				20			
9.00 but under 10.00.....	31				28			
8.00 but under 9.00.....	11	1			3	1		
7.00 but under 8.00.....	31	3			34			
6.00 but under 7.00.....	120	38			11			
5.50 but under 6.00.....	4	9						
5.00 but under 5.50.....	70	32	63	27	7			
4.50 but under 5.00.....	67	35	61	52	2	2		
4.00 but under 4.50.....	34	26	48	25	4		5	
3.50 but under 4.00.....	7	10	41	45			9	4
3.00 but under 3.50.....		8	6	7			5	
2.50 but under 3.00.....		3	16	8			11	
2.00 but under 2.50.....		2	7	9			1	
1.50 but under 2.00.....							1	
Under \$1.50.....							3	
Totals.....	467	167	242	173	177	3	35	4

BICYCLES, TRICYCLES, ETC. (7 ESTABLISHMENTS).

\$25.00 per week and over...	13				18			
20.00 but under \$25.00.....	13				35			
18.00 but under 20.00.....	27				61			
15.00 but under 18.00.....	36				80			
13.00 but under 15.00.....	37				76			
12.00 but under 13.00.....	96				78			
11.00 but under 12.00.....	7				29			
10.00 but under 11.00.....	108				54			
9.00 but under 10.00.....	169				91			
8.00 but under 9.00.....	27				45			
7.00 but under 8.00.....	95				69		9	
6.00 but under 7.00.....	93	1	5		51		13	
5.50 but under 6.00.....	8				15		10	
5.00 but under 5.50.....	14		14		14		22	
4.50 but under 5.00.....	2		12		8		26	
4.00 but under 4.50.....		1	10		5		14	
3.50 but under 4.00.....		2	11			2	24	
3.00 but under 3.50.....		3	20				21	
2.50 but under 3.00.....			11	5			16	3
2.00 but under 2.50.....			4				4	3
1.50 but under 2.00.....								
Under \$1.50.....								
Totals.....	795	7	87	5	729	2	164	6

CLASSIFIED WEEKLY WAGES BY INDUSTRIES—Continued.

BOOTS AND SHOES (24 ESTABLISHMENTS).

Classification of weekly wages.	1896.				1897.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per week and over...	8				13			
20.00 but under \$25.00.....	37				34			
18.00 but under 20.00.....	26				29			
15.00 but under 18.00.....	75				79			
13.00 but under 15.00.....	61				55			
12.00 but under 13.00.....	65				90			
11.00 but under 12.00.....	64	4			74	30		
10.00 but under 11.00.....	69	13			75	16		
9.00 but under 10.00.....	172	15			170	20		
8.00 but under 9.00.....	106	20			112	20		
7.00 but under 8.00.....	141	35			111	30	5	
6.00 but under 7.00.....	115	86			111	82	8	2
5.50 but under 6.00.....	19	50			20	50	1	
5.00 but under 5.50.....	43	106	3		36	106		3
4.50 but under 5.00.....	24	92	7		15	70	28	1
4.00 but under 4.50.....	31	45	37	6	20	47	49	9
3.50 but under 4.00.....	10	52	16	22	3	55	21	32
3.00 but under 3.50.....	367	26	57	49		32	411	49
2.50 but under 3.00.....	14	9	19	38		3	21	28
2.00 but under 2.50.....	9	14	8	34			41	59
1.50 but under 2.00.....	11	1	2	15				8
Under \$1.50			5					
Totals	1,467	568	154	164	1,047	576	585	191

BOXES (WOODEN AND PAPER—29 ESTABLISHMENTS).

\$25.00 per week and over...	8				7			
20.00 but under \$25.00.....	7				3			
18.00 but under 20.00.....	13				13			
15.00 but under 18.00.....	15				18			
13.00 but under 15.00.....	16				26			
12.00 but under 13.00.....	28				41			
11.00 but under 12.00.....	25				29			
10.00 but under 11.00.....	47				61	1		
9.00 but under 10.00.....	96	1			114			
8.00 but under 9.00.....	69	1			45	1		
7.00 but under 8.00.....	79	1			140			
6.00 but under 7.00.....	144	52	2		105	65	13	
5.50 but under 6.00.....	16	16	7	6	41	11	8	3
5.00 but under 5.50.....	14	19	4	1	25	32	16	3
4.50 but under 5.00.....	33	29	6	1	37	36	7	4
4.00 but under 4.50.....	26	53	9	5	19	44	17	8
3.50 but under 4.00.....	24	20	13	13	9	43	14	20
3.00 but under 3.50.....	44	24	38	28	3	17	88	30
2.50 but under 3.00.....	28	28	38	48		25	80	47
2.00 but under 2.50.....	2		29	22		3	25	12
1.50 but under 2.00.....				3		6		8
Under \$1.50							1	1
Total	761	244	146	127	736	284	269	136

CLASSIFIED WEEKLY WAGES BY INDUSTRIES—Continued.

BRICK, TILES AND SEWER PIPE (23 ESTABLISHMENTS).

Classification of weekly wages.	1896.				1897.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per week and over.....	3							
20.00 but under \$25.00.....					1			
18.00 but under 20.00.....	4				1			
15.00 but under 18.00.....	4				3			
13.00 but under 15.00.....	3				2			
12.00 but under 13.00.....	7				1			
11.00 but under 12.00.....	3				2			
10.00 but under 11.00.....	50				5			
9.00 but under 10.00.....	79				72			
8.00 but under 9.00.....	110				124			
7.00 but under 8.00.....	143				158			
6.00 but under 7.00.....	153		3		182			
5.50 but under 6.00.....					8			
5.00 but under 5.50.....	2				1			
4.50 but under 5.00.....	3		54		1		13	
4.00 but under 4.50.....					3			
3.50 but under 4.00.....	3		12					
3.00 but under 3.50.....	8		20		8		7	
2.50 but under 3.00.....							5	
2.00 but under 2.50.....	2		1				8	
1.50 but under 2.00.....								
Under \$1.50.....								
Total.....	577		90		570		33	

BROOMS, BRUSHES AND BASKETS (19 ESTABLISHMENTS).

\$25.00 per week and over.....	1							
20.00 but under \$25.00.....	1							
18.00 but under 20.00.....	1				2			
15.00 but under 18.00.....	1				1			
13.00 but under 15.00.....	2				7			
12.00 but under 13.00.....	14				9			
11.00 but under 12.00.....	6				10			
10.00 but under 11.00.....	6				10			
9.00 but under 10.00.....	17				44			
8.00 but under 9.00.....	31				23			
7.00 but under 8.00.....	36				39			
6.00 but under 7.00.....	43				31	2	2	
5.50 but under 6.00.....	5	2	2		1			
5.00 but under 5.50.....	3				13		3	
4.50 but under 5.00.....	7	4	2		13	4	10	
4.00 but under 4.50.....	1		3		2			
3.50 but under 4.00.....	4		2				6	
3.00 but under 3.50.....	1		24				12	
2.50 but under 3.00.....			6				6	
2.00 but under 2.50.....			1				16	
1.50 but under 2.00.....							5	
Under \$1.50.....								
Totals.....	180	6	40		205	6	60	

CLASSIFIED WEEKLY WAGES BY INDUSTRIES—Continued.

BURIAL CASES, CASKETS, COFFINS, ETC. (4 ESTABLISHMENTS).

Classification of weekly wages	1896				1897			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age
\$25.00 per week and over...	1				1			
20.00 but under \$25.00.....	1							
18.00 but under 20.00.....	2				5			
15.00 but under 18.00.....	6				5			
13.00 but under 15.00.....	4				5			
12.00 but under 13.00.....	16				13			
11.00 but under 12.00.....	2	1			3			
10.00 but under 11.00.....	5				16			
9.00 but under 10.00.....	13				11	1		
8.00 but under 9.00.....	35				31	1		
7.00 but under 8.00.....	44	1			45	2		
6.00 but under 7.00.....	62	4			57	4		
5.50 but under 6.00.....	40	3	5		43	7	5	
5.00 but under 5.50.....	1	2			4	4		
4.50 but under 5.00.....		2	3		2	1	4	
4.00 but under 4.50.....		7	2		4	7		1
3.50 but under 4.00.....	3	2	3			2	1	
3.00 but under 3.50.....		20	10			20	2	9
2.50 but under 3.00.....		6				6		
2.00 but under 2.50.....								
1.50 but under 2.00.....								
Under \$1.50								
Total	225	48	23		242	55	13	10

CEMENT, LIME, PLASTER, ETC. (12 ESTABLISHMENTS).

\$25.00 per week and over...	3				1			
20.00 but under \$25.00.....					1			
18.00 but under 20.00.....	1				1			
15.00 but under 18.00.....	10				3			
13.00 but under 15.00.....	8				10			
12.00 but under 13.00.....	20				14			
11.00 but under 12.00.....	1				3			
10.00 but under 11.00.....	11				10			
9.00 but under 10.00.....	90				58			
8.00 but under 9.00.....	51				43			
7.00 but under 8.00.....	117				224			
6.00 but under 7.00.....	42				56		5	
5.50 out under 6.00.....					1			
5.00 but under 5.50.....	2				2			
4.50 but under 5.00.....	4				4			
4.00 but under 4.50.....	2	1				1	2	
3.50 but under 4.00.....	1							
3.00 but under 3.50.....	2						4	
2.50 but under 3.00.....							7	
2.00 but under 2.50.....		1				1		
1.50 but under 2.00.....								
Under \$1.50								
Total	365	2			431	2	13	

CLASSIFIED WEEKLY WAGES BY INDUSTRIES—Continued.

CHAIRS (13 ESTABLISHMENTS).

Classification of weekly wages.	1896.				1897.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per week and over...	20	.....	.....	.....	9	.....	.....	.....
20.00 but under \$25.00.....	10	.....	.....	.....	9	.....	.....	.....
18.00 but under 20.00.....	24	.....	.....	.....	20	.....	.....	.....
12.00 but under 18.00.....	23	.....	.....	.....	18	.....	.....	.....
13.00 but under 15.00.....	51	.....	.....	.....	39	.....	.....	.....
12.00 but under 13.00.....	69	.....	.....	.....	41	.....	.....	.....
11.00 but under 12.00.....	11	.....	.....	.....	43	.....	.....	.....
10.00 but under 11.00.....	59	.....	.....	.....	99	.....	.....	.....
9.00 but under 10.00.....	125	.....	.....	.....	133	1	.....	.....
8.00 but under 9.00.....	142	.....	.....	.....	225	.....	.....	.....
7.00 but under 8.00.....	666	38	35	.....	590	1	25	.....
6.00 but under 7.00.....	753	2	.....	.....	991	1	.....	.....
5.50 but under 6.00.....	157	9	55	10	121	7	45	.....
5.00 but under 5.50.....	11	6	2	.....	16	6	22	10
4.50 but under 5.00.....	90	8	35	.....	112	35	63	1
4.00 but under 4.50.....	22	10	6	15	1	21	67	.....
3.50 but under 4.00.....	79	35	39	3	2	49	99	23
3.00 but under 3.50.....	9	72	26	25	3	40	124	41
2.50 but under 3.00.....	.....	.....	.....	.....	.....	2	69	29
2.00 but under 2.50.....	.....	.....	.....	.....	.....	.....	32	25
1.50 but under 2.00.....	.....	.....	.....	.....	.....	.....	.....	.....
Under \$1.50.....	.....	.....	.....	.....	.....	.....	.....	.....
Total.....	2,321	180	198	53	2,472	163	546	129

CHEMICAL PREPARATIONS (13 ESTABLISHMENTS).

\$25.00 per week and over...	20	.....	.....	.....	16	.....	.....	.....
20.00 but under \$25.00.....	4	.....	.....	.....	5	.....	.....	.....
18.00 but under 20.00.....	6	.....	.....	.....	16	.....	.....	.....
15.00 but under 18.00.....	7	.....	.....	.....	5	.....	.....	.....
13.00 but under 15.00.....	15	.....	.....	.....	15	.....	.....	.....
12.00 but under 13.00.....	6	.....	.....	.....	6	.....	.....	.....
11.00 but under 12.00.....	3	.....	.....	.....	2	.....	.....	.....
10.00 but under 11.00.....	11	.....	.....	.....	11	.....	.....	.....
9.00 but under 10.00.....	6	2	.....	.....	7	2	.....	.....
8.00 but under 9.00.....	5	.....	.....	.....	3	.....	.....	.....
7.00 but under 8.00.....	4	1	.....	.....	5	1	.....	.....
6.00 but under 7.00.....	8	1	2	4	10	1	.....	.....
5.50 but under 6.00.....	2	.....	.....	.....	6	4	.....	.....
5.00 but under 5.50.....	7	4	.....	.....	3	2	.....	.....
4.50 but under 5.00.....	.....	1	.....	.....	3	7	.....	.....
4.00 but under 4.50.....	2	.....	.....	.....	2	9	.....	.....
3.50 but under 4.00.....	.....	1	.....	.....	3	.....	2	.....
3.00 but under 3.50.....	.....	11	1	.....	.....	3	.....	.....
2.50 but under 3.00.....	.....	1	.....	2	.....	1	2	2
2.00 but under 2.50.....	.....	.....	.....	1	.....	.....	.....	1
1.50 but under 2.00.....	.....	.....	.....	.....	.....	.....	.....	.....
Under \$1.50.....	.....	.....	.....	.....	.....	.....	.....	.....
Total.....	106	23	3	7	118	30	4	3

CLASSIFIED WEEKLY WAGES BY INDUSTRIES—Continued.

CIGARS, SNUFF AND TOBACCO (54 ESTABLISHMENTS).

Classification of weekly wages.	1896.				1897.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per week and over...	13	.....	.....	.....	9	.....	.....	.....
20.00 but under \$25.00.....	7	.....	.....	.....	7	.....	.....	.....
18.00 but under 20.00.....	26	.....	.....	.....	8	.....	.....	.....
15.00 but under 18.00.....	62	.....	.....	.....	51	.....	.....	.....
13.00 but under 15.00.....	42	.....	.....	.....	48	.....	.....	.....
12.00 but under 13.00.....	61	.....	.....	.....	63	.....	.....	.....
11.00 but under 12.00.....	54	1	.....	.....	64	.....	.....	.....
10.00 but under 11.00.....	85	6	2	18	69	5	.....	.....
9.00 but under 10.00.....	104	9	.....	.....	88	11	.....	.....
8.00 but under 9.00.....	47	13	.....	.....	54	.....	.....	.....
7.00 but under 8.00.....	52	21	5	.....	53	23	6	.....
6.00 but under 7.00.....	23	17	.....	5	43	30	1	5
5.50 but under 6.00.....	5	6	3	4	5	3	.....	5
5.00 but under 5.50.....	22	14	2	3	8	2	.....	9
4.50 but under 5.00.....	13	3	6	1	8	4	6	3
4.00 but under 4.50.....	8	14	2	4	7	8	14	6
3.50 but under 4.00.....	3	5	8	4	.....	7	3	6
3.00 but under 3.50.....	6	33	13	14	1	13	31	27
2.50 but under 3.00.....	4	19	16	5	.....	18	24	49
2.00 but under 2.50.....	7	8	18	20	.....	.....	25	19
1.50 but under 2.00.....	.....	.....	5	19	.....	.....	.....	28
Under \$1.50.....	.....	.....	.....	.....	.....	.....	.....	.....
Total.....	644	169	80	79	586	124	110	157

CLOTHING (25 ESTABLISHMENTS).

\$25.00 per week and over...	30	.....	.....	.....	34	.....	.....	.....
20.00 but under \$25.00.....	30	.....	.....	.....	14	.....	.....	.....
18.00 but under 20.00.....	26	.....	.....	.....	35	.....	.....	.....
15.00 but under 18.00.....	25	.....	.....	.....	27	.....	.....	.....
13.00 but under 15.00.....	27	.....	.....	.....	32	.....	.....	.....
12.00 but under 13.00.....	26	.....	.....	.....	37	.....	.....	.....
11.00 but under 12.00.....	20	.....	.....	.....	35	.....	.....	.....
10.00 but under 11.00.....	28	5	.....	.....	12	31	.....	5
9.00 but under 10.00.....	12	24	.....	.....	28	16	.....	.....
8.00 but under 9.00.....	12	20	.....	.....	31	12	.....	.....
7.00 but under 8.00.....	12	48	.....	.....	19	72	.....	.....
6.00 but under 7.00.....	12	110	.....	1	20	87	.....	.....
5.50 but under 6.00.....	3	130	.....	.....	17	123	.....	.....
5.00 but under 5.50.....	1	534	.....	.....	8	131	.....	.....
4.50 but under 5.00.....	40	74	7	.....	8	117	.....	1
4.00 but under 4.50.....	1	118	.....	.....	4	137	2	1
3.50 but under 4.00.....	2	213	4	18	2	107	3	5
3.00 but under 3.50.....	7	86	5	8	1	237	2	13
2.50 but under 3.00.....	6	57	1	27	.....	112	13	7
2.00 but under 2.50.....	.....	52	5	14	.....	35	10	28
1.50 but under 2.00.....	.....	18	2	2	.....	44	6	20
Under \$1.50.....	.....	.....	.....	.....	.....	29	1	15
Total.....	333	1,489	24	70	328	1,291	37	107

CLASSIFIED WEEKLY WAGES BY INDUSTRIES—Continued.

COAL AND WOOD (28 ESTABLISHMENTS).

Classification of weekly wages.	1896.				1897.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per week and over...	4				79			
20.00 but under \$25.00.....	18				184			
18.00 but under 20.00.....	56				40			
15.00 but under 18.00.....	30				90			
13.00 but under 15.00.....	42				44			
12.00 but under 13.00.....	41				237			
11.00 but under 12.00.....	41				448			
10.00 but under 11.00.....	576				284			
9.00 but under 10.00.....	336				673			
8.00 but under 9.00.....	97	2			112			
7.00 but under 8.00.....	130		2		128			
6.00 but under 7.00.....	43	2	7		42			
5.50 but under 6.00.....	79				4	1		
5.00 but under 5.50.....					1			
4.50 but under 5.00.....			1		3	2		
4.00 but under 4.50.....			1		6			
3.50 but under 4.00.....				1	2			1
3.00 but under 3.50.....				1	1			1
2.50 but under 3.00.....								
2.00 but under 2.50.....								
1.50 but under 2.00.....								8
Under \$1.50								
Total	1,493	4	12		2,378	3	10	

CONFECTIONERY, CRACKERS, ETC. (12 ESTABLISHMENTS).

\$25.00 per week and over...	8				8			
20.00 but under \$25.00.....	13				12			
18.00 but under 20.00.....	8				10			
15.00 but under 18.00.....	15				13			
13.00 but under 15.00.....	13				17			
12.00 but under 13.00.....	33				23			
11.00 but under 12.00.....	12				12			
10.00 but under 11.00.....	38				34			
9.00 but under 10.00.....	29				23			
8.00 but under 9.00.....	14	1			17			
7.00 but under 8.00.....	12				14	1		
6.00 but under 7.00.....	14	1			20	3		
5.50 but under 6.00.....	8	2			2	3		
5.00 but under 5.50.....	15	5	1		14	9	1	
4.50 but under 5.00.....	5	11			7	17		
4.00 but under 4.50.....	15	23	3		12	25	13	1
3.50 but under 4.00.....	8	49	16		6	31	20	9
3.00 but under 3.50.....	5	38	17	21	18	33	12	34
2.50 but under 3.00.....	3	43	20	57		54	35	72
2.00 but under 2.50.....		6	25	36		3	6	90
1.50 but under 2.00.....		10	12	35			3	72
Under \$1.50				2				
Total	268	189	94	151	262	179	90	278

CLASSIFIED WEEKLY WAGES BY INDUSTRIES—Continued.

COOKING AND HEATING APPARATUS (24 ESTABLISHMENTS).

Classification of weekly wages.	1896.				1897.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per week and over...	15				8			
20.00 but under \$25.00.....	6				9			
18.00 but under 20.00.....	30				28			
15.00 but under 18.00.....	39				103			
13.00 but under 15.00.....	56				70			
12.00 but under 13.00.....	80				90			
11.00 but under 12.00.....	45				38			
10.00 but under 11.00.....	78				82			
9.00 but under 10.00.....	112				144			
8.00 but under 9.00.....	112	2			133			
7.00 but under 8.00.....	142	2			185	1	2	
6.00 but under 7.00.....	86	1	3		113	1	1	
5.50 but under 6.00.....	11		1		22			
5.00 but under 5.50.....	13		5		25			
4.50 but under 5.00.....	17		14		22		11	
4.00 but under 4.50.....	3		24		9		26	
3.50 but under 4.00.....	1	5	24		7	5	18	
3.00 but under 3.50.....	9	1	48		9	1	54	
2.50 but under 3.00.....			82				81	
2.00 but under 2.50.....			100				104	
1.50 but under 2.00.....							3	
Under \$1.50.....								
Total	905	11	301		1,097	8	300	

COOPERAGE (21 ESTABLISHMENTS).

\$25.00 per week and over...	3				3			
20.00 but under \$25.00.....	8				8			
18.00 but under 20.00.....	11				10			
15.00 but under 18.00.....	25				29			
13.00 but under 15.00.....	21				53			
12.00 but under 13.00.....	63				36			
11.00 but under 12.00.....	50				29			
10.00 but under 11.00.....	70				88			
9.00 but under 10.00.....	117				97			
8.00 but under 9.00.....	58				63			
7.00 but under 8.00.....	78				73			
6.00 but under 7.00.....	85		8		77		4	
5.50 but under 6.00.....	9				34			
5.00 but under 5.50.....	25		2		11			
4.50 but under 5.00.....	12		12		11		23	
4.00 but under 4.50.....	2				10		12	
3.50 but under 4.00.....	17		3		4		18	
3.00 but under 3.50.....			8		1		12	
2.50 but under 3.00.....			2				2	
2.00 but under 2.50.....								
1.50 but under 2.00.....								
Under \$1.50.....								
Total	654		35		637		71	

CLASSIFIED WEEKLY WAGES BY INDUSTRIES—Continued.

COTTON AND LINEN GOODS (5 ESTABLISHMENTS).

Classification of weekly wages.	1896.				1897.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per week and over.....	.....	.....	.....	.....	5	.....	.....	.....
20.00 but under \$25.00.....	.....	.....	.....	.....	1	.....	.....	.....
18.00 but under 20.00.....	.....	.....	.....	.....	4	.....	.....	.....
15.00 but under 18.00.....	2	.....	.....	.....	7	.....	.....	.....
13.00 but under 15.00.....	4	.....	.....	.....	6	.....	.....	.....
12.00 but under 13.00.....	12	.....	.....	.....	2	.....	.....	.....
11.00 but under 12.00.....	5	1	.....	.....	4	1	.....	.....
10.00 but under 11.00.....	2	1	.....	.....	8	.....	.....	.....
9.00 but under 10.00.....	10	.....	.....	.....	24	4	.....	.....
8.00 but under 9.00.....	15	4	.....	.....	7	15	.....	.....
7.00 but under 8.00.....	8	26	.....	.....	28	48	.....	.....
6.00 but under 7.00.....	36	29	.....	.....	35	33	.....	.....
5.50 but under 6.00.....	24	34	.....	.....	22	14	3	.....
5.00 but under 5.50.....	26	37	.....	.....	20	13	2	1
4.50 but under 5.00.....	13	8	.....	.....	22	67	26	20
4.00 but under 4.50.....	18	59	24	20	6	11	14	14
3.50 but under 4.00.....	9	47	8	10	2	30	16	11
3.00 but under 3.50.....	5	41	20	17	.....	22	11	.....
2.50 but under 3.00.....	.....	8	36	5	.....	.....	.....	.....
2.00 but under 2.50.....	.....	1	3	2	.....	.....	.....	.....
1.50 but under 2.00.....	.....	.....	.....	.....	.....	4	.....	4
Under \$1.50 .....	.....	.....	.....	.....	.....	.....	.....	.....
Totals	189	296	91	54	207	237	94	66

ELECTRICAL AND GAS APPARATUS AND SUPPLIES (21 ESTABLISHMENTS).

\$25.00 per week and over....	19	.....	.....	.....	14	.....	.....	.....
20.00 but under \$25.00.....	21	.....	.....	.....	28	.....	.....	.....
18.00 but under 20.00.....	39	.....	.....	.....	33	.....	.....	.....
15.00 but under 18.00.....	71	.....	.....	.....	67	.....	.....	.....
13.00 but under 15.00.....	82	.....	.....	.....	85	.....	.....	.....
12.00 but under 13.00.....	103	.....	.....	.....	101	.....	.....	.....
11.00 but under 12.00.....	47	.....	.....	.....	66	.....	.....	.....
10.00 but under 11.00.....	74	.....	.....	.....	94	.....	.....	.....
9.00 but under 10.00.....	145	.....	.....	.....	175	.....	.....	.....
8.00 but under 9.00.....	55	.....	.....	.....	53	.....	.....	.....
7.00 but under 8.00.....	81	1	.....	.....	92	.....	.....	.....
6.00 but under 7.00.....	27	1	8	.....	38	7	1	.....
5.50 but under 6.00.....	6	.....	3	7	11	.....	.....	.....
5.00 but under 5.50.....	12	4	8	.....	28	3	10	.....
4.50 but under 5.00.....	8	5	8	2	11	52	11	5
4.00 but under 4.50.....	10	8	41	3	13	7	16	.....
3.50 but under 4.00.....	16	3	6	3	5	3	29	.....
3.00 but under 3.50.....	18	5	9	7	5	2	35	.....
2.50 but under 3.00.....	8	.....	4	2	.....	.....	20	2
2.00 but under 2.50.....	7	.....	7	.....	.....	.....	8	1
1.50 but under 2.00.....	.....	.....	.....	.....	.....	.....	.....	.....
Under \$1.50 .....	.....	.....	.....	.....	.....	.....	.....	.....
Totals	849	27	94	24	919	74	130	8

CLASSIFIED WEEKLY WAGES BY INDUSTRIES—Continued.

ELECTRIC AND GAS LIGHTING, POWER AND STREET RAILWAYS
(49 ESTABLISHMENTS).

Classification of weekly wages.	1896.				1897.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per week and over....	18	.....	.....	.....	14	.....	.....	.....
20.00 but under \$25.00.....	29	.....	.....	.....	29	.....	.....	.....
18.00 but under 20.00.....	30	.....	.....	.....	76	.....	.....	.....
15.00 but under 18.00.....	146	.....	.....	.....	122	.....	.....	.....
13.00 but under 15.00.....	80	.....	.....	.....	54	.....	.....	.....
12.00 but under 13.00.....	813	.....	.....	.....	776	.....	.....	.....
11.00 but under 12.00.....	58	1	.....	.....	51	.....	.....	.....
10.00 but under 11.00.....	175	.....	.....	.....	225	.....	.....	.....
9.00 but under 10.00.....	277	.....	.....	.....	85	.....	.....	.....
8.00 but under 9.00.....	63	.....	.....	.....	77	.....	.....	.....
7.00 but under 8.00.....	295	2	2	.....	131	.....	.....	.....
6.00 but under 7.00.....	15	.....	.....	.....	95	1	.....	.....
5.50 but under 6.00.....	1	1	.....	7	26	3	1	.....
5.00 but under 5.50.....	3	.....	.....	.....	67	.....	.....	.....
4.50 but under 5.00.....	.....	.....	.....	.....	8	.....	.....	.....
4.00 but under 4.50.....	.....	.....	.....	.....	13	.....	.....	.....
3.50 but under 4.00.....	4	2	.....	.....	1	.....	2	.....
3.00 but under 3.50.....	14	1	7	7	.....	1	.....	.....
2.50 but under 3.00.....	.....	.....	3	.....	.....	.....	.....	.....
2.00 but under 2.50.....	.....	.....	3	3	.....	.....	.....	.....
1.50 but under 2.00.....	.....	.....	3	.....	.....	.....	.....	.....
Under \$1.50.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals.....	2,021	7	18	17	2,093	5	3	.....

FANCY ARTICLES (8 ESTABLISHMENTS).

\$25.00 per week and over....	1	.....	.....	.....	.....	.....	.....	.....
20.00 but under \$25.00.....	3	.....	.....	.....	1	.....	.....	.....
18.00 but under 20.00.....	5	.....	.....	.....	6	.....	.....	.....
15.00 but under 18.00.....	6	.....	.....	.....	5	.....	.....	.....
13.00 but under 15.00.....	5	.....	.....	.....	4	.....	.....	.....
12.00 but under 13.00.....	3	.....	.....	.....	2	.....	.....	.....
11.00 but under 12.00.....	2	.....	.....	.....	3	.....	.....	.....
10.00 but under 11.00.....	12	.....	.....	.....	15	.....	.....	.....
9.00 but under 10.00.....	9	2	.....	.....	16	1	.....	.....
8.00 but under 9.00.....	11	.....	.....	.....	13	.....	.....	.....
7.00 but under 8.00.....	11	.....	1	.....	29	.....	1	.....
6.00 but under 7.00.....	11	.....	7	2	19	.....	2	.....
5.50 but under 6.00.....	11	.....	.....	1	5	1	.....	.....
5.00 but under 5.50.....	1	.....	.....	.....	4	.....	1	.....
4.50 but under 5.00.....	3	.....	1	.....	2	.....	.....	.....
4.00 but under 4.50.....	.....	.....	2	1	1	2	1	.....
3.50 but under 4.00.....	3	.....	1	5	1	3	2	.....
3.00 but under 3.50.....	.....	12	2	3	.....	19	8	5
2.50 but under 3.00.....	.....	9	7	.....	.....	9	3	.....
2.00 but under 2.50.....	.....	1	3	.....	.....	1	2	3
1.50 but under 2.00.....	.....	.....	.....	.....	.....	.....	.....	.....
Under \$1.50.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals.....	97	24	24	12	126	36	20	8

CLASSIFIED WEEKLY WAGES BY INDUSTRIES—Continued.

FLOUR AND FEED (86 ESTABLISHMENTS).

Classification of weekly wages.	1896.				1897.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per week and over....	28				15			
20.00 but under \$25.00.....	19				10			
18.00 but under 20.00.....	29				14			
15.00 but under 18.00.....	93				82			
13.00 but under 15.00.....	76				64			
12.00 but under 13.00.....	95				80			
11.00 but under 12.00.....	56				42			
10.00 but under 11.00.....	215				220			
9.00 but under 10.00.....	238	1			290	1		
8.00 but under 9.00.....	104	1			108	2		
7.00 but under 8.00.....	114				122			
6.00 but under 7.00.....	49	1	1		61		1	
5.50 but under 6.00.....	5				5			
5.00 but under 5.50.....	8		1		7		3	
4.50 but under 5.00.....	4		1		5		1	
4.00 but under 4.50.....		2			1			
3.50 but under 4.00.....	1	2				1	1	1
3.00 but under 3.50.....	3				4	4	1	1
2.50 but under 3.00.....						1		
2.00 but under 2.50.....								
1.50 but under 2.00.....								
Under \$1.50.....								
Totals.....	1,137	7	3		1,130	9	7	2

FOOD PREPARATIONS (31 ESTABLISHMENTS).

\$25.00 per week and over....	29				9			
20.00 but under \$25.00.....	62				27			
18.00 but under 20.00.....	57				37			
15.00 but under 18.00.....	64				53			
13.00 but under 15.00.....	62				87			
12.00 but under 13.00.....	150				125			
11.00 but under 12.00.....	110	13			55			
10.00 but under 11.00.....	109				115			
9.00 but under 10.00.....	282				388			
8.00 but under 9.00.....	191	1			122			
7.00 but under 8.00.....	396	3			608			
6.00 but under 7.00.....	181	40	13		125	1	15	
5.50 but under 6.00.....	29	10			79	1	2	
5.00 but under 5.50.....	74	34	64	25	113	3	4	
4.50 but under 5.00.....	107	81	88	54	11	314	480	104
4.00 but under 4.50.....	39	26	51	25	16	280	107	103
3.50 but under 4.00.....	10	30	48	89	1	5	15	186
3.00 but under 3.50.....	1	7	40	69		7	21	98
2.50 but under 3.00.....		3	13	6		5	12	21
2.00 but under 2.50.....		3	9	8		5	11	16
1.50 but under 2.00.....							8	
Under \$1.50.....							2	
Totals.....	1,953	251	326	276	1,971	621	677	528

CLASSIFIED WEEKLY WAGES BY INDUSTRIES—Continued.

FURNITURE (42 ESTABLISHMENTS).

Classification of weekly wages.	1896.				1897.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per week and over....	9				5			
20.00 but under \$25.00.....	3				3			
18.00 but under 20.00.....	23				17			
15.00 but under 18.00.....	56				36			
13.00 but under 15.00.....	36				52			
12.00 but under 13.00.....	99				84			
11.00 but under 12.00.....	50				63	3		
10.00 but under 11.00.....	127	1			148	1		
9.00 but under 10.00.....	281				266	1		
8.00 but under 9.00.....	227	1			225			
7.00 but under 8.00.....	443				452		1	
6.00 but under 7.00.....	541	9			650	7	24	
5.50 but under 6.00.....	106	3		3	63	2	19	
5.00 but under 5.50.....	57	5	6	3	53	1	39	3
4.50 but under 5.00.....	147	23	17	4	40	11	55	4
4.00 but under 4.50.....	20	4	24	4	13	6	30	4
3.50 but under 4.00.....	27	5	66	3	15		58	3
3.00 but under 3.50.....	23	10	86	4	1	6	14	5
2.50 but under 3.00.....	1		63	4			108	6
2.00 but under 2.50.....	6		28	4			75	4
1.50 but under 2.00.....			2				9	
Under \$1.50.....								2
Totals	2,292	61	292	29	2,186	38	432	31

FURS, GLOVES AND MITTENS (11 ESTABLISHMENTS).

\$25.00 per week and over....	14				3			
20.00 but under \$25.00.....	1							
18.00 but under 20.00.....	6				3			
15.00 but under 18.00.....	2				5			
13.00 but under 15.00.....	10				4			
12.00 but under 13.00.....	6				14			
11.00 but under 12.00.....	15	1			2	1		
10.00 but under 11.00.....	13	10			17	8		
9.00 but under 10.00.....	26	14			11	9		
8.00 but under 9.00.....	2				7	6		
7.00 but under 8.00.....	14	8			1	24		
6.00 but under 7.00.....	6	24			16	21		
5.50 but under 6.00.....	30	63				6	1	
5.00 but under 5.50.....		9			9	18		
4.50 but under 5.00.....	17	41			1	33	10	3
4.00 but under 4.50.....	6	23	10	10		20		
3.50 but under 4.00.....	2	29	1	3		33	4	1
3.00 but under 3.50.....	2	3		4		7		9
2.50 but under 3.00.....		1	1	6		2	4	5
2.00 but under 2.50.....			1			4		
1.50 but under 2.00.....			1					
Under \$1.50.....								
Totals	172	226	14	23	93	192	19	18

CLASSIFIED WEEKLY WAGES BY INDUSTRIES—Continued.

GRAIN AND WAREHOUSE MEN (12 ESTABLISHMENTS).

Classification of weekly wages.	1896.				1897.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per week and over.....	8				6			
20.00 but under \$25.00.....	1							
18.00 but under 20.00.....	14				13			
15.00 but under 18.00.....	12				22			
13.00 but under 15.00.....	13				8			
12.00 but under 13.00.....	9				15			
11.00 but under 12.00.....	12				6			
10.00 but under 11.00.....	49				112			
9.00 but under 10.00.....	35				40			
8.00 but under 9.00.....	5				5			
7.00 but under 8.00.....	2	1			2			
6.00 but under 7.00.....								
5.50 but under 6.00.....								
5.00 but under 5.50.....								
4.50 but under 5.00.....								
4.00 but under 4.50.....								
3.50 but under 4.00.....								
3.00 but under 3.50.....								
2.50 but under 3.00.....								
2.00 but under 2.50.....								
1.50 but under 2.00.....								
Under \$1.50.....								
Totals.....	160	1			229			

IRON GOODS (MALLEABLE—25 ESTABLISHMENTS).

\$25.00 per week and over.....	133				86			
20.00 but under \$25.00.....	64				57			
18.00 but under 20.00.....	96				63			
15.00 but under 18.00.....	218				186			
13.00 but under 15.00.....	208				161			
12.00 but under 13.00.....	254				312			
11.00 but under 12.00.....	159				186			
10.00 but under 11.00.....	180				308	3		
9.00 but under 10.00.....	360				382			
8.00 but under 9.00.....	229				418			
7.00 but under 8.00.....	387		3		673	9	1	
6.00 but under 7.00.....	585		13		477	5	6	
5.50 but under 6.00.....	58		19		78		22	
5.00 but under 5.50.....	74		20		61	3	28	
4.50 but under 5.00.....	9		52		63		71	
4.00 but under 4.50.....	4		41		15		72	
3.50 but under 4.00.....	1		78		1		110	
3.00 but under 3.50.....	7		76		3	2	73	2
2.50 but under 3.00.....			8				4	
2.00 but under 2.50.....			3				8	
1.50 but under 2.00.....							6	
Under \$1.50.....								
Totals.....	3,026		313		3,530	22	401	2

CLASSIFIED WEEKLY WAGES BY INDUSTRIES—Continued.

IRON (PIG—2 ESTABLISHMENTS).

Classification of weekly wages.	1896.				1897.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per week and over...	3				3			
20.00 but under \$25.00.....	3							
18.00 but under 20.00.....								
15.00 but under 18.00.....	5				2			
13.00 but under 15.00.....	9				15			
12.00 but under 13.00.....	13				10			
11.00 but under 12.00.....	26				14			
10.00 but under 11.00.....	12				9			
9.00 but under 10.00.....	53				47			
8.00 but under 9.00.....	2				35			
7.00 but under 8.00.....	28				41			
6.00 but under 7.00.....								
5.50 but under 6.00.....								
5.00 but under 5.50.....								
4.50 but under 5.00.....								
4.00 but under 4.50.....								
3.50 but under 4.00.....								
3.00 but under 3.50.....								
2.50 but under 3.00.....								
2.00 but under 2.50.....								
1.50 but under 2.00.....								
Under \$1.50.....								
Totals.....	154				176			

KNIT GOODS (15 ESTABLISHMENTS).

\$25.00 per week and over...	16				8			
20.00 but under \$25.00.....	6				4			
18.00 but under 20.00.....	6				9			
15.00 but under 18.00.....	15				20			
13.00 but under 15.00.....	9				5			
12.00 but under 13.00.....	11				24			
11.00 but under 12.00.....	2				3			
10.00 but under 11.00.....	11				2			
9.00 but under 10.00.....	29	3			2			
8.00 but under 9.00.....	4				6	5		
7.00 but under 8.00.....	37	6			31	35		
6.00 but under 7.00.....	25	14			1	13	41	59
5.50 but under 6.00.....	12	67	3		30	66	22	20
5.00 but under 5.50.....	2	96	3		1	27	3	
4.50 but under 5.00.....	2	165			2	148		
4.00 but under 4.50.....	2	133	26		2	184	28	3
3.50 but under 4.00.....		101		8	3	115	25	97
3.00 but under 3.50.....		124	40	103	1	140	10	50
2.50 but under 3.00.....	4	80	33	112	2	84	18	211
2.00 but under 2.50.....		18	10	190		48	1	129
1.50 but under 2.00.....		10	4	65		36		49
Under \$1.50.....						12	2	54
Totals.....	191	817	119	478	154	863	150	696

CLASSIFIED WEEKLY WAGES BY INDUSTRIES—Continued.

LAGER BEER (71 ESTABLISHMENTS).

Classification of weekly wages.	1896.				1897.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per week and over.....	65				40			
20.00 but under \$25.00.....	195				40			
18.00 but under 20.00.....	40				42			
15.00 but under 18.00.....	551				680			
13.00 but under 15.00.....	478				518			
12.00 but under 13.00.....	385				331			
11.00 but under 12.00.....	135				183			
10.00 but under 11.00.....	215				219			
9.00 but under 10.00.....	221				229			
8.00 but under 9.00.....	99				73			
7.00 but under 8.00.....	84	2			128	2		
6.00 but under 7.00.....	87	2			65	7	2	
5.50 but under 6.00.....	12		9		27		8	
5.00 but under 5.50.....	29	4	6	3	17	2	11	
4.50 but under 5.00.....	14	2	8		14		54	
4.00 but under 4.50.....	10	68	18		19	72	58	
3.50 but under 4.00.....	8	162	61		23	1	75	
3.00 but under 3.50.....	7	24	49	53		11	50	22
2.50 but under 3.00.....			35	44		7	8	75
2.00 but under 2.50.....				56		21	52	
1.50 but under 2.00.....								3
Under \$1.50								6
Totals	2,635	264	186	156	2,648	123	318	106

LAUNDRIES (75 ESTABLISHMENTS).

\$25.00 per week and over.....	2				2			
20.00 but under \$25.00.....	4				2			
18.00 but under 20.00.....	5				3			
15.00 but under 18.00.....	12				8			
13.00 but under 15.00.....	15				17			
12.00 but under 13.00.....	23				16			
11.00 but under 12.00.....	6	1			16	6		
10.00 but under 11.00.....	34	3			30	2		
9.00 but under 10.00.....	28	9			22	12		
8.00 but under 9.00.....	21	11			19	11		
7.00 but under 8.00.....	16	16			18	27		
6.00 but under 7.00.....	16	102	2		9	114	2	
5.50 but under 6.00.....	7	53		3	8	39	1	
5.00 but under 5.50.....	4	138			3	116		
4.50 but under 5.00.....		52			1	48	1	1
4.00 but under 4.50.....	1	74		1	2	70	7	1
3.50 but under 4.00.....	1	47	1	3	5	63	2	5
3.00 but under 3.50.....		56	3	10	5	42	2	10
2.50 but under 3.00.....		8	4	10		16	9	9
2.00 but under 2.50.....		4	1	4		6	2	6
1.50 but under 2.00.....		1	1	1		1	1	
Under \$1.50		1						
Totals	195	576	12	32	184	573	27	32

STATISTICS OF MANUFACTURES.

609

CLASSIFIED WEEKLY WAGES BY INDUSTRIES—Continued.

LEATHER (33 ESTABLISHMENTS).

Classification of weekly wages.	1896.				1897.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per week and over...	19				18			
20.00 but under \$25.00.....	16				25			
18.00 but under 20.00.....	59				29			
15.00 but under 18.00.....	128				97			
13.00 but under 15.00.....	159				177			
12.00 but under 13.00.....	276				232			
11.00 but under 12.00.....	171				200			
10.00 but under 11.00.....	324				212			
9.00 but under 10.00.....	892	54			900			
8.00 but under 9.00.....	943				1,191	2		
7.00 but under 8.00.....	706		1		870	2		
6.00 but under 7.00.....	317				305	25	35	
5.50 but under 6.00.....	14				33	25	10	
5.00 but under 5.50.....	42	55	5		55	46	9	
4.50 but under 5.00.....	16	1	5	1	23	51	15	
4.00 but under 4.50.....	20		44	1	35		32	
3.50 but under 4.00.....	6		37	1		20	28	6
3.00 but under 3.50.....	20	3	48		7	18	55	25
2.50 but under 3.00.....	8	5	12	1			27	11
2.00 but under 2.50.....	2		11	3			14	3
1.50 but under 2.00.....		1		1				1
Under \$1.50								
Total	4,138	119	163	8	4,409	189	225	46

LITHOGRAPHING AND ENGRAVING (7 ESTABLISHMENTS).

\$25.00 per week and over...	26				24			
20.00 but under \$25.00.....	29				23			
18.00 but under 20.00.....	26				33			
15.00 but under 18.00.....	20				21			
13.00 but under 15.00.....	21				24			
12.00 but under 13.00.....	21				26			
11.00 but under 12.00.....	11	1			10			
10.00 but under 11.00.....	14				8			
9.00 but under 10.00.....	19				16			
8.00 but under 9.00.....	9				13			
7.00 but under 8.00.....	13	4			25	1		
6.00 but under 7.00.....	16	1			26	1		
5.50 but under 6.00.....	11	9			20			
5.00 but under 5.50.....	13				11	3		
4.50 but under 5.00.....	16				9	2	1	
4.00 but under 4.50.....	32	4	2		12	1	2	1
3.50 but under 4.00.....	28		1	1	19	3	7	3
3.00 but under 3.50.....	37	3	7		11	5	15	6
2.50 but under 3.00.....	10	14	21			3	33	2
2.00 but under 2.50.....		3		3			11	1
1.50 but under 2.00.....								
Under \$1.50								
Total	372	39	31	4	331	19	69	13

CLASSIFIED WEEKLY WAGES BY INDUSTRIES—Continued.

LUMBER, LATH AND SHINGLES (168 ESTABLISHMENTS).

Classification of weekly wages.	1896				1897.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per week and over...	221	.....	.....	.....	226	.....	.....	.....
20.00 but under \$25.00.....	265	.....	.....	.....	228	.....	.....	.....
18.00 but under 20.00.....	201	.....	.....	.....	178	.....	.....	.....
15.00 but under 18.00.....	346	.....	.....	.....	319	.....	.....	.....
13.00 but under 15.00.....	373	.....	.....	.....	381	.....	.....	.....
12.00 but under 13.00.....	564	.....	.....	.....	596	.....	.....	.....
11.00 but under 12.00.....	284	2	.....	.....	436	.....	.....	.....
10.00 but under 11.00.....	797	4	.....	.....	844	8	.....	.....
9.00 but under 10.00.....	2,470	1	.....	.....	2,856	2	.....	.....
8.00 but under 9.00.....	3,297	4	.....	.....	3,916	4	.....	.....
7.00 but under 8.00.....	5,515	6	16	.....	4,494	10	16	2
6.00 but under 7.00.....	1,802	15	29	2	1,668	21	44	.....
5.50 but under 6.00.....	181	35	35	.....	139	.....	38	.....
5.00 but under 5.50.....	102	31	23	.....	151	34	26	.....
4.50 but under 5.00.....	97	9	83	4	175	5	130	.....
4.00 but under 4.50.....	94	4	35	.....	12	2	64	.....
3.50 but under 4.00.....	21	8	51	.....	13	.....	92	.....
3.00 but under 3.50.....	2	1	101	.....	6	4	124	.....
2.50 but under 3.00.....	.....	2	79	3	.....	7	65	4
2.00 but under 2.50.....	1	7	29	.....	.....	5	30	2
1.50 but under 2.00.....	.....	1	.....	.....	.....	.....	2	.....
Under \$1.50.....	.....	.....	.....	.....	.....	.....	.....	.....
Total.....	16638	130	481	9	16639	102	631	8

MALT (20 ESTABLISHMENTS).

\$25.00 per week and over...	12	.....	.....	.....	17	.....	.....	.....
20.00 but under \$25.00.....	10	.....	.....	.....	5	.....	.....	.....
18.00 but under 20.00.....	1	.....	.....	.....	5	.....	.....	.....
15.00 but under 18.00.....	17	.....	.....	.....	17	.....	.....	.....
13.00 but under 15.00.....	19	.....	.....	.....	23	.....	.....	.....
12.00 but under 13.00.....	66	.....	.....	.....	80	.....	.....	.....
11.00 but under 12.00.....	118	.....	.....	.....	163	.....	.....	.....
10.00 but under 11.00.....	137	.....	.....	.....	65	.....	.....	.....
9.00 but under 10.00.....	86	.....	.....	.....	72	1	.....	.....
8.00 but under 9.00.....	51	.....	.....	.....	63	.....	.....	.....
7.00 but under 8.00.....	26	.....	.....	.....	53	.....	.....	.....
6.00 but under 7.00.....	2	.....	1	.....	2	.....	.....	.....
5.50 but under 6.00.....	.....	1	.....	.....	.....	.....	.....	.....
5.00 but under 5.50.....	.....	.....	.....	.....	.....	1	.....	.....
4.50 but under 5.00.....	.....	.....	.....	.....	.....	.....	.....	.....
4.00 but under 4.50.....	.....	.....	.....	.....	.....	.....	.....	.....
3.50 but under 4.00.....	.....	.....	2	.....	.....	.....	1	.....
3.00 but under 3.50.....	.....	.....	.....	.....	.....	.....	.....	.....
2.50 but under 3.00.....	.....	.....	.....	.....	.....	.....	.....	.....
2.00 but under 2.50.....	.....	.....	.....	.....	.....	.....	.....	.....
1.50 but under 2.00.....	.....	.....	.....	.....	.....	.....	1	.....
Under \$1.50.....	.....	.....	.....	.....	.....	.....	.....	.....
Total.....	525	1	3	.....	565	2	2	.....

CLASSIFIED WEEKLY WAGES BY INDUSTRIES—Continued.

MACHINES AND MACHINERY (86 ESTABLISHMENTS).

Classification of weekly wages.	1896.				1897.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per week and over...	61				56			
20.00 but under \$25.00.....	103				87			
18.00 but under 20.00.....	159				165			
15.00 but under 18.00.....	508				440			
13.00 but under 15.00.....	482				636			
12.00 but under 13.00.....	498				445			
11.00 but under 12.00.....	228	2			102	1		
10.00 but under 11.00.....	393	2			429	1		
9.00 but under 10.00.....	628	1			482	1		
8.00 but under 9.00.....	441	1			508			
7.00 but under 8.00.....	305		1		504		1	
6.00 but under 7.00.....	190	3	3	2	191	6	3	
5.50 but under 6.00.....	30	1	3		35		5	
5.00 but under 5.50.....	45	3	7		41	5	18	
4.50 but under 5.00.....	56		27	2	46		33	
4.00 but under 4.50.....	17		19		11	3	54	
3.50 but under 4.00.....	29		33				48	
3.00 but under 3.50.....	40		65		2		103	
2.50 but under 3.00.....	4		6				12	
2.00 but under 2.50.....	6		7				17	1
1.50 but under 2.00.....							1	
Under \$1.50								
Total	4,224	13	176	4	4,181	17	295	1

MIXED TEXTILES (9 ESTABLISHMENTS).

\$25.00 per week and over...								
20.00 but under \$25.00.....								
18.00 but under 20.00.....	1				1			
15.00 but under 18.00.....	6				7			
13.00 but under 15.00.....	10				15			
12.00 but under 13.00.....	13				11			
11.00 but under 12.00.....	5							
10.00 but under 11.00.....	7				4	1		
9.00 but under 10.00.....	12	2			16	7		
8.00 but under 9.00.....	8	10			10	3		
7.00 but under 8.00.....	22	17			18	9		
6.00 but under 7.00.....	14	14		3	12	10		
5.50 but under 6.00.....		14			4			
5.00 but under 5.50.....	3	14	1		4	17	1	
4.50 but under 5.00.....	4	20	7		2	11	12	5
4.00 but under 4.50.....	2	21	12	10		25	5	10
3.50 but under 4.00.....		20	3	14		33	2	5
3.00 but under 3.50.....		18	10	22		41	11	13
2.50 but under 3.00.....			13	10		3	12	10
2.00 but under 2.50.....			4	10		2		14
1.50 but under 2.00.....			13			2	15	
Under \$1.50						8		
Total	107	150	63	69	104	172	58	57

CLASSIFIED WEEKLY WAGES BY INDUSTRIES—Continued.

OFFICE AND SALOON FIXTURES, ETC. (15 ESTABLISHMENTS).

Classification of weekly wages.	1896.				1897.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per week and over...	3							
20.00 but under \$25.00.....	3				2			
18.00 but under 20.00.....	2				6			
15.00 but under 18.00.....	19				22			
13.00 but under 15.00.....	35				42			
12.00 but under 13.00.....	56				59			
11.00 but under 12.00.....	40				46			
10.00 but under 11.00.....	82				51			
9.00 but under 10.00.....	152				128			
8.00 but under 9.00.....	89	1			78	1		
7.00 but under 8.00.....	99				109		1	
6.00 but under 7.00.....	23				26			
5.50 but under 6.00.....	16				12			
5.00 but under 5.50.....	7		1		11			
4.50 but under 5.00.....	9				14			
4.00 but under 4.50.....	11		4		1		8	
3.50 but under 4.00.....	13		4				1	
3.00 but under 3.50.....	7		26				38	
2.50 but under 3.00.....	3		2				10	
2.00 but under 2.50.....	3		1					2
1.50 but under 2.00.....								
Under \$1.50.....								
Total.....	672	1	38		607	1	58	2

PAINTS, OILS AND CRUDE CHEMICALS (7 ESTABLISHMENTS).

\$25.00 per week and over...	5				6			
20.00 but under \$25.00.....	3				3			
18.00 but under 20.00.....	2				9			
15.00 but under 18.00.....	3				1			
13.00 but under 15.00.....	3				3			
12.00 but under 13.00.....	11				11			
11.00 but under 12.00.....	9				10			
10.00 but under 11.00.....	17				16			
9.00 but under 10.00.....	28				31			
8.00 but under 9.00.....	16				18			
7.00 but under 8.00.....	18				15			
6.00 but under 7.00.....	11	1			5	1		
5.50 but under 6.00.....	2				1			
5.00 but under 5.50.....	1		2		5			
4.50 but under 5.00.....	1				6		1	
4.00 but under 4.50.....								
3.50 but under 4.00.....			2				4	
3.00 but under 3.50.....	1		2				3	
2.50 but under 3.00.....								
2.00 but under 2.50.....			1					
1.50 but under 2.00.....								
Under \$1.50.....								
Totals.....	131	1	7		140	1	8	

CLASSIFIED WEEKLY WAGES BY INDUSTRIES—Continued.

PAPER AND PULP (34 ESTABLISHMENTS).

Classification of weekly wages.	1896.				1897.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per week and over...	15				11			
20.00 but under \$25.00.....	7				5			
18.00 but under 20.00.....	79				82			
15.00 but under 18.00.....	93				94			
13.00 but under 15.00.....	66				82			
12.00 but under 13.00.....	103				101			
11.00 but under 12.00.....	28				46			
10.00 but under 11.00.....	143				143			
9.00 but under 10.00.....	577				641			
8.00 but under 9.00.....	451				232			
7.00 but under 8.00.....	526	2			861	8		1
6.00 but under 7.00.....	396	44	4		261	43	9	2
5.50 but under 6.00.....	42	12	19		22	6		
5.00 but under 5.50.....	33	59	3		34	51	6	
4.50 but under 5.00.....	60	362	27	10	21	263	42	23
4.00 but under 4.50.....		11	1		13	46	41	
3.50 but under 4.00.....	4	19	1	1		3	94	
3.00 but under 3.50.....	3	81	6	8		80	32	
2.50 but under 3.00.....								1
2.00 but under 2.50.....	2		1			2	1	14
1.50 but under 2.00.....		2						
Under \$1.50.....				12				
Totals.....	2,628	592	62	31	2,649	502	225	41

PRINTERS' SUPPLIES (4 ESTABLISHMENTS).

\$25.00 per week and over.....					2			
20.00 but under \$25.00.....	7				3			
18.00 but under 20.00.....	5				4			
15.00 but under 18.00.....	6				2			
13.00 but under 15.00.....	2				6			
12.00 but under 13.00.....	6	1			7			
11.00 but under 12.00.....	10					1		
10.00 but under 11.00.....	35	1			22			
9.00 but under 10.00.....	11				25	1		
8.00 but under 9.00.....	34				18	1		
7.00 but under 8.00.....					29	3		
6.00 but under 7.00.....	28	3	3		28		3	
5.50 but under 6.00.....								
5.00 but under 5.50.....	2		2		6		2	
4.50 but under 5.00.....	5				4			
4.00 but under 4.50.....	1						1	
3.50 but under 4.00.....	1		10				10	
3.00 but under 3.50.....		1					7	
2.50 but under 3.00.....				6			6	
2.00 but under 2.50.....								
1.50 but under 2.00.....							1	
Under \$1.50.....								
Total.....	153	6	15	6	156	6	30	

CLASSIFIED WEEKLY WAGES BY INDUSTRIES—Continued.

RAILROAD EQUIPMENT (20 ESTABLISHMENTS).

Classification of weekly wages.	1896.				1897.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per week and over...	80	.....	.....	.....	28	.....	.....	.....
20.00 but under \$25.00.....	322	.....	.....	.....	625	.....	.....	.....
18.00 but under 20.00.....	140	.....	.....	.....	317	.....	.....	.....
15.00 but under 18.00.....	473	.....	.....	.....	362	.....	.....	.....
13.00 but under 15.00.....	588	.....	.....	.....	522	.....	.....	.....
12.00 but under 13.00.....	463	.....	.....	.....	1,641	.....	.....	.....
11.00 but under 12.00.....	230	1	.....	.....	147	.....	.....	.....
10.00 but under 11.00.....	626	.....	.....	.....	572	.....	.....	.....
9.00 but under 10.00.....	901	1	.....	.....	3,575	1	.....	.....
8.00 but under 9.00.....	535	.....	.....	.....	486	.....	.....	.....
7.00 but under 8.00.....	621	4	7	.....	1,637	3	2	.....
6.00 but under 7.00.....	164	1	3	.....	114	.....	6	.....
5.50 but under 6.00.....	40	.....	.....	.....	29	.....	.....	.....
5.00 but under 5.50.....	15	.....	2	.....	14	.....	.....	.....
4.50 but under 5.00.....	19	1	6	.....	30	.....	3	.....
4.00 but under 4.50.....	2	.....	.....	.....	1	.....	.....	.....
3.50 but under 4.00.....	3	.....	.....	.....	.....	.....	.....	.....
3.00 but under 3.50.....	.....	.....	.....	.....	.....	.....	.....	.....
2.50 but under 3.00.....	.....	.....	.....	.....	.....	.....	.....	.....
2.00 but under 2.50.....	.....	.....	.....	.....	.....	.....	.....	.....
1.50 but under 2.00.....	.....	.....	.....	.....	.....	.....	.....	.....
Under \$1.50.....	.....	.....	.....	.....	.....	.....	.....	.....
Total	5,222	8	18	.....	10100	4	11	.....

SADDLERY, HARNESS, ETC. (9 ESTABLISHMENTS).

\$25.00 per week and over...	1	.....	.....	.....	1	.....	.....	.....
20.00 but under \$25.00.....	3	.....	.....	.....	3	.....	.....	.....
18.00 but under 20.00.....	4	.....	.....	.....	6	.....	.....	.....
15.00 but under 18.00.....	5	.....	.....	.....	8	.....	.....	.....
13.00 but under 15.00.....	7	.....	.....	.....	3	.....	.....	.....
12.00 but under 13.00.....	10	.....	.....	.....	15	.....	.....	.....
11.00 but under 12.00.....	4	.....	.....	.....	7	.....	.....	.....
10.00 but under 11.00.....	10	.....	.....	.....	21	.....	.....	.....
9.00 but under 10.00.....	20	.....	.....	.....	30	.....	.....	.....
8.00 but under 9.00.....	1	2	.....	.....	13	3	.....	.....
7.00 but under 8.00.....	13	1	.....	.....	15	.....	.....	.....
6.00 but under 7.00.....	23	2	.....	.....	29	2	.....	.....
5.50 but under 6.00.....	3	5	.....	.....	9	7	.....	.....
5.00 but under 5.50.....	7	4	1	.....	6	5	1	1
4.50 but under 5.00.....	1	2	.....	.....	1	3	.....	.....
4.00 but under 4.50.....	4	2	2	.....	3	3	4	2
3.50 but under 4.00.....	1	.....	8	.....	.....	.....	7	4
3.00 but under 3.50.....	3	.....	11	.....	.....	.....	11	4
2.50 but under 3.00.....	.....	.....	5	.....	.....	.....	2	5
2.00 but under 2.50.....	.....	.....	5	.....	.....	.....	6	.....
1.50 but under 2.00.....	.....	.....	1	.....	.....	.....	2	.....
Under \$1.50.....	.....	.....	.....	.....	.....	.....	.....	.....
Total	120	18	33	.....	170	23	33	16

CLASSIFIED WEEKLY WAGES BY INDUSTRIES—Continued.

SASH, DOORS, BLINDS AND MOULDING (73 ESTABLISHMENTS).

Classification of weekly wages.	1896.				1897.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per week and over...	11	.....	.....	.....	7	.....	.....	.....
20.00 but under \$25.00.....	23	.....	.....	.....	21	.....	.....	.....
18.00 but under 20.00.....	36	.....	.....	.....	36	.....	.....	.....
15.00 but under 18.00.....	104	.....	.....	.....	102	.....	.....	.....
13.00 but under 15.00.....	133	.....	.....	.....	121	.....	.....	.....
12.00 but under 13.00.....	221	.....	.....	.....	230	.....	.....	.....
11.00 but under 12.00.....	39	1	.....	.....	59	.....	.....	.....
10.00 but under 11.00.....	245	1	.....	.....	277	.....	.....	.....
9.00 but under 10.00.....	420	.....	.....	.....	415	1	.....	.....
8.00 but under 9.00.....	341	1	.....	.....	278	.....	.....	.....
7.00 but under 8.00.....	492	5	4	.....	492	.....	.....	.....
6.00 but under 7.00.....	560	5	3	1	736	3	6	.....
5.50 but under 6.00.....	104	.....	21	.....	33	.....	.....	.....
5.00 but under 5.50.....	77	6	22	.....	115	1	24	.....
4.50 but under 5.00.....	35	.....	38	.....	100	.....	87	.....
4.00 but under 4.50.....	20	4	41	.....	37	3	63	.....
3.50 but under 4.00.....	15	10	46	.....	34	10	99	.....
3.00 but under 3.50.....	39	6	70	.....	18	5	134	5
2.50 but under 3.00.....	26	.....	58	.....	.....	.....	115	1
2.00 but under 2.50.....	.....	.....	.....	.....	.....	59	98	14
1.50 but under 2.00.....	.....	.....	.....	.....	.....	.....	8	.....
Under \$1.50.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals.....	2,941	39	308	1	3,111	82	639	20

SHEET METAL GOODS (26 ESTABLISHMENTS).

\$25.00 per week and over...	13	.....	.....	.....	9	.....	.....	.....
20.00 but under \$25.00.....	17	.....	.....	.....	13	.....	.....	.....
18.00 but under 20.00.....	21	.....	.....	.....	13	.....	.....	.....
15.00 but under 18.00.....	56	.....	.....	.....	62	.....	.....	.....
13.00 but under 15.00.....	74	.....	.....	.....	34	.....	.....	.....
12.00 but under 13.00.....	76	.....	.....	.....	82	.....	.....	.....
11.00 but under 12.00.....	63	.....	.....	.....	29	.....	.....	.....
10.00 but under 11.00.....	110	.....	.....	.....	77	.....	.....	.....
9.00 but under 10.00.....	137	1	.....	.....	118	.....	.....	.....
8.00 but under 9.00.....	173	.....	.....	.....	124	.....	.....	.....
7.00 but under 8.00.....	99	.....	.....	.....	97	.....	.....	.....
6.00 but under 7.00.....	161	1	.....	.....	213	1	1	.....
5.50 but under 6.00.....	120	1	.....	.....	103	.....	5	.....
5.00 but under 5.50.....	71	39	1	.....	114	.....	2	.....
4.50 but under 5.00.....	36	65	15	.....	103	5	17	.....
4.00 but under 4.50.....	43	17	166	2	40	16	206	.....
3.50 but under 4.00.....	21	9	74	112	19	13	262	12
3.00 but under 3.50.....	11	28	53	21	3	27	185	23
2.50 but under 3.00.....	.....	.....	58	30	.....	.....	90	15
2.00 but under 2.50.....	.....	.....	33	10	.....	.....	23	11
1.50 but under 2.00.....	.....	.....	4	12	.....	.....	3	.....
Under \$1.50.....	.....	.....	.....	.....	.....	.....	.....	.....
Total.....	1,302	164	404	187	1,253	62	794	66

CLASSIFIED WEEKLY WAGES BY INDUSTRIES—Continued.

SHIP AND BOAT BUILDING (6 ESTABLISHMENTS).

Classification of weekly wages.	1896.				1897.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per week and over...	7				2			
20.00 but under \$25.00.....	10				23			
18.00 but under 20.00.....	14				8			
15.00 but under 18.00.....	132				126			
13.00 but under 15.00.....	115				52			
12.00 but under 13.00.....	107	1			69			
11.00 but under 12.00.....	107							
10.00 but under 11.00.....					72			
9.00 but under 10.00.....	340				191			
8.00 but under 9.00.....					3			
7.00 but under 8.00.....	54				74			
6.00 but under 7.00.....	25				23	2		
5.50 but under 6.00.....	1	1			2			
5.00 but under 5.50.....								
4.50 but under 5.00.....			6		2			
4.00 but under 4.50.....								
3.50 but under 4.00.....							2	
3.00 but under 3.50.....								
2.50 but under 3.00.....						1	1	
2.00 but under 2.50.....			1				1	
1.50 but under 2.00.....							1	
Under \$1.50.....								
Totals	912	3	7		647	3	5	

SOAP, LYE AND POTASH (9 ESTABLISHMENTS).

\$25.00 per week and over....								
20.00 but under \$25.00.....								
18.00 but under 20.00.....	3				7			
15.00 but under 18.00.....	6				4			
13.00 but under 15.00.....	4				3			
12.00 but under 13.00.....	7				5			
11.00 but under 12.00.....	5				4			
10.00 but under 11.00.....	7				10			
9.00 but under 10.00.....	14				16			
8.00 but under 9.00.....	15				15			
7.00 but under 8.00.....	7				15			
6.00 but under 7.00.....	10			1	10		1	
5.50 but under 6.00.....	8			1	4			
5.00 but under 5.50.....		2			2	2		
4.50 but under 5.00.....		2			1	1		
4.00 but under 4.50.....	2	3	1		2	4	3	
3.50 but under 4.00.....		4	1			8	10	
3.00 but under 3.50.....		8	3	2		1	18	5
2.50 but under 3.00.....							15	1
2.00 but under 2.50.....		18				2		
1.50 but under 2.00.....								
Under \$1.50.....								
Totals	88	37	9	4	108	18	47	6

CLASSIFIED WEEKLY WAGES BY INDUSTRIES—Continued.

STAVES AND HEADING (21 ESTABLISHMENTS).

Classification of weekly wages.	1896.				1897.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per week and over								
20.00 but under \$25.00	1							
18.00 but under 20.00	2				4			
15.00 but under 18.00	4				3			
13.00 but under 15.00	4				6			
12.00 but under 13.00	31				25			
11.00 but under 12.00	22				3			
10.00 but under 11.00	2				25			
9.00 but under 10.00	35				72			
8.00 but under 9.00	39				104			
7.00 but under 8.00	198		1		275			
6.00 but under 7.00	53		6		50		3	
5.50 but under 6.00	8		9		7		12	
5.00 but under 5.50	1		2				2	
4.50 but under 5.00	9		11		8		17	
4.00 but under 4.50	1		6				21	
3.50 but under 4.00			14				32	
3.00 but under 3.50	1		29				36	
2.50 but under 3.00		1					1	
2.00 but under 2.50								
1.50 but under 2.00								
Under \$1.50								
Totals	411	1	78		582		133	

STONE (GRANITE, MARBLE, ETC.—10 ESTABLISHMENTS).

\$25.00 per week and over	1				2			
20.00 but under \$25.00	19				19			
18.00 but under 20.00					18			
15.00 but under 18.00	13				10			
13.00 but under 15.00	7				9			
12.00 but under 13.00	29				32			
11.00 but under 12.00	57				2			
10.00 but under 11.00	16				43			
9.00 but under 10.00	45				56			
8.00 but under 9.00	1				4			
7.00 but under 8.00	14				22			
6.00 but under 7.00	8				2			
5.50 but under 6.00								
5.00 but under 5.50	5				2			
4.50 but under 5.00					1			
4.00 but under 4.50								
3.50 but under 4.00							2	
3.00 but under 3.50	2							
2.50 but under 3.00								
2.00 but under 2.50								
1.50 but under 2.00								
Under \$1.50								
Totals	225				222		2	

CLASSIFIED WEEKLY WAGES BY INDUSTRIES—Continued.

STRAW GOODS (5 ESTABLISHMENTS).

Classification of weekly wages.	1896.				1897.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per week and over.....	3				3			
20.00 but under \$25.00.....	5				3			
18.00 but under 20.00.....	4				3			
15.00 but under 18.00.....	12				8			
13.00 but under 15.00.....	8				5			
12.00 but under 13.00.....	26				20			
11.00 but under 12.00.....	3				3			
10.00 but under 11.00.....	13	6			11	5		
9.00 but under 10.00.....	36				6	13		
8.00 but under 9.00.....	29				35			
7.00 but under 8.00.....	81	4			72	4		
6.00 but under 7.00.....	50	10			52			
5.50 but under 6.00.....					15			
5.00 but under 5.50.....		21			15	29		
4.50 but under 5.00.....		140	10	2	12	110		
4.00 but under 4.50.....		57	6	2		41	1	
3.50 but under 4.00.....		95	4	13		30	7	7
3.00 but under 3.50.....		51	12	22		11	12	12
2.50 but under 3.00.....				3			7	
2.00 but under 2.50.....								12
1.50 but under 2.00.....								
Under \$1.50.....								
Totals.....	270	390	32	42	263	243	27	31

TOYS AND GAMES (5 ESTABLISHMENTS).

\$25.00 per week and over.....								
20.00 but under \$25.00.....	1				3			
18.00 but under 20.00.....	2				3			
15.00 but under 18.00.....	3				2			
13.00 but under 15.00.....	5				6			
12.00 but under 13.00.....	7				8			
11.00 but under 12.00.....	5				6			
10.00 but under 11.00.....	6				7			
9.00 but under 10.00.....	15				15			
8.00 but under 9.00.....	14				8			
7.00 but under 8.00.....	23				20			
6.00 but under 7.00.....	19		6		31		4	
5.50 but under 6.00.....	2		9		1		5	
5.00 but under 5.50.....	9	1	4		8	1	3	
4.50 but under 5.00.....	7	1	4		10	1	4	
4.00 but under 4.50.....	5		10		4		8	
3.50 but under 4.00.....	2	5	7		18	4	10	
3.00 but under 3.50.....	12	4	10		3	3	9	
2.50 but under 3.00.....			14				19	
2.00 but under 2.50.....			10				13	
1.50 but under 2.00.....			10				10	
Under \$1.50.....				24				24
Totals.....	137	11	84	24	153	9	85	24

CLASSIFIED WEEKLY WAGES BY INDUSTRIES—Continued.

TRUNKS, VALISES, ETC. (9 ESTABLISHMENTS).

Classification of weekly wages.	1896.				1897.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per week and over...	3				3			
20.00 but under \$25.00.....								
18.00 but under 20.00.....	3				3			
15.00 but under 18.00.....	9				9			
13.00 but under 15.00.....	15				10			
12.00 but under 13.00.....	25				24			
11.00 but under 12.00.....	15				14	1		
10.00 but under 11.00.....	42				29			
9.00 but under 10.00.....	82	1			81	1		
8.00 but under 9.00.....	65				57			
7.00 but under 8.00.....	92	1			84			
6.00 but under 7.00.....	54	1	2		73	1	2	
5.50 but under 6.00.....	5				25			
5.00 but under 5.50.....	36	1	5	2	26	2		
4.50 but under 5.00.....	16	11	10	7	39	7	4	2
4.00 but under 4.50.....	22	7	18		36	17	23	
3.50 but under 4.00.....	1	13	21		10	10	18	11
3.00 but under 3.50.....			24		5	2	21	
2.50 but under 3.00.....		3	12	8		1	16	11
2.00 but under 2.50.....			6	4		2	13	2
1.50 but under 2.00.....			1	1			3	
Under \$1.50.....								
Totals	485	38	99	22	528	44	100	26

VENEER (9 ESTABLISHMENTS).

\$25.00 per week and over.....	1				1			
20.00 but under \$25.00.....								
18.00 but under 20.00.....								
15.00 but under 18.00.....	6				6			
13.00 but under 15.00.....	3				6			
12.00 but under 13.00.....	6				10			
11.00 but under 12.00.....	11				13			
10.00 but under 11.00.....	18	1			15			
9.00 but under 10.00.....	47				18			
8.00 but under 9.00.....	24				44			
7.00 but under 8.00.....	55				125			
6.00 but under 7.00.....	61		12		79		2	
5.50 but under 6.00.....	9				4			
5.00 but under 5.50.....	5		6		8			
4.50 but under 5.00.....	4		5		5		10	
4.00 but under 4.50.....	16				20		22	
3.50 but under 4.00.....			28				37	
3.00 but under 3.50.....			11				14	
2.50 but under 3.00.....			8				6	
2.00 but under 2.50.....								
1.50 but under 2.00.....								
Under \$1.50.....								
Totals	266	1	70		354		91	

CLASSIFIED WEEKLY WAGES BY INDUSTRIES—Continued.

WAGONS, CARRIAGES AND SLEIGHS (53 ESTABLISHMENTS).

Classification of weekly wages.	1896.				1897.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per week and over...	13			1	9			
20.00 but under \$25.00.....	21				24			
18.00 but under 20.00.....	26				34			
15.00 but under 18.00.....	99				120			
13.00 but under 15.00.....	90				154			
12.00 but under 13.00.....	199				425			
11.00 but under 12.00.....	109				200	3		
10.00 but under 11.00.....	166				398	6		
9.00 but under 10.00.....	387	3			351	9		
8.00 but under 9.00.....	328				233	7		
7.00 but under 8.00.....	453	4	1		284	2	5	
6.00 but under 7.00.....	163	3	12		162	4	13	
5.50 but under 6.00.....	51	1			35	1	1	
5.00 but under 5.50.....	47	8	14		21		13	
4.50 but under 5.00.....	25	11	26		19		36	
4.00 but under 4.50.....	7	1	9	4	3	3	16	
3.50 but under 4.00.....	22	5	22			4	12	
3.00 but under 3.50.....	2		33	1		3	20	1
2.50 but under 3.00.....		1	9	2			9	
2.00 but under 2.50.....							1	
1.50 but under 2.00.....			2				1	
Under \$1.50								
Totals	2,208	42	128	7	2,452	42	127	1

WOODENWARE (11 ESTABLISHMENTS).

\$25.00 per week and over ..								
20.00 but under \$25.00	11				3			
18.00 but under 20.00.....	12				4			
15.00 but under 18.00.....	3				12			
13.00 but under 15.00.....					15			
12.00 but under 13.00.....	30				11			
11.00 but under 12.00.....	33				24			
10.00 but under 11.00.....	112				69			
9.00 but under 10.00.....	30				69			
8.00 but under 9.00.....	524				326			
7.00 but under 8.00.....	360				365			
6.00 but under 7.00.....	266	2			152			
5.50 but under 6.00.....	3				33			
5.00 but under 5.50.....	42		2		15		4	
4.50 but under 5.00.....		2	54		4		69	
4.00 but under 4.50.....	5	1	5		2		6	
3.50 but under 4.00.....	5		13				25	
3.00 but under 3.50.....	3		50				44	
2.50 but under 3.00.....			59				66	
2.00 but under 2.50.....	2		4				12	
1.50 but under 2.00.....								
Under \$1.50								
Totals	1,441	5	187		1,104		226	

STATISTICS OF MANUFACTURES.

621

CLASSIFIED WEEKLY WAGES BY INDUSTRIES—Continued.

WOOLEN AND WORSTED GOODS (17 ESTABLISHMENTS).

Classification of weekly wages.	1896.				1897.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per week and over...	4				3			
20.00 but under \$25.00.....	7				9			
18.00 but under 20.00.....	13				13			
15.00 but under 18.00.....	16				14			
13.00 but under 15.00.....	15				10			
12.00 but under 13.00.....	24				22			
11.00 but under 12.00.....	6				4			
10.00 but under 11.00.....	37	8			30			
9.00 but under 10.00.....	60	14			75	6		
8.00 but under 9.00.....	18	11			28	18		
7.00 but under 8.00.....	43	17	2		56	7		
6.00 but under 7.00.....	101	46	4	1	102	47	2	1
5.50 but under 6.00.....	10	23			22	18		3
5.00 but under 5.50.....	9	34	3	4	6	35	1	
4.50 but under 5.00.....	6	60	10	5	31	78	5	3
4.00 but under 4.50.....	6	66	3	2	13	73	4	5
3.50 but under 4.00.....	8	65	9	8	2	67	8	21
3.00 but under 3.50.....	1	105	10	32	2	122	27	80
2.50 but under 3.00.....		32	6	16		7	8	41
2.00 bu. under 2.50.....	1	7	12	15		3	14	29
1.50 but under 2.00.....			4	13				11
Under \$1.50.....								
Totals.....	385	493	63	96	442	481	69	194

MISCELLANEOUS.

\$25.00 per week and over....	3				2			
20.00 but under \$25.00.....	5				3			
18.00 but under 20.00.....	2				3			
15.00 but under 18.00.....	11				10			
13.00 but under 15.00.....	8				8			
12.00 but under 13.00.....	17				16			
11.00 but under 12.00.....	11				7			
10.00 but under 11.00.....	25				25			
9.00 but under 10.00.....	24				32			
8.00 but under 9.00.....	26	15			47			
7.00 out under 8.00.....	33	6			20	11		
6.00 but under 7.00.....	19	5	2		21	6	1	
5.50 but under 6.00.....	2	3			2	3		
5.00 but under 5.50.....	9	32			6	32		
4.50 but under 5.00.....	4	14	4		4	14	3	
4.00 but under 4.50.....	2	8		13	11		12	1
3.50 but under 4.00.....		14		8	12		7	
3.00 but under 3.50.....	2		22	3	2	13	1	17
2.50 but under 3.00.....	10	11	2	9		10	2	9
2.00 but under 2.50.....	5		1	2		1	1	5
1.50 but under 2.00.....								2
Under \$1.50.....								
Totals.....	223	108	31	35	231	90	27	34

CLASSIFIED WEEKLY WAGES BY INDUSTRIES—Continued.

ALL INDUSTRIES (1,499 ESTABLISHMENTS).

Classification of weekly wages.	1896				1897.			
	Males 18 years of age and over.	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.	Males 18 years of age and over	Females 18 years of age and over.	Males under 18 years of age.	Females under 18 years of age.
\$25.00 per week and over....	1,030	.....	.....	.....	861	.....	.....	.....
20.00 but under \$25.00.....	1,533	.....	.....	.....	1,674	.....	.....	.....
18.00 but under 20.00.....	1,496	.....	.....	.....	1,632	.....	.....	.....
15.00 but under 18.00.....	3,990	.....	.....	.....	3,860	.....	.....	.....
13.00 but under 15.00.....	3,924	.....	.....	.....	4,194	.....	.....	.....
12.00 but under 13.00.....	5,819	1	.....	.....	7,156	.....	.....	.....
11.00 but under 12.00.....	2,823	36	.....	.....	3,193	78	.....	.....
10.00 but under 11.00.....	5,348	65	.....	.....	6,117	74	.....	.....
9.00 but under 10.00.....	17,292	146	.....	.....	14,357	118	.....	.....
8.00 but under 9.00.....	9,380	129	.....	.....	10,321	202	.....	.....
7.00 but under 8.00.....	14,007	288	65	.....	14,633	307	133	61
6.00 but under 7.00.....	8,526	763	212	23	7,878	738	293	30
5.50 but under 6.00.....	1,356	598	209	42	1,515	386	215	11
5.00 but under 5.50.....	1,190	1,460	324	71	1,244	821	304	24
4.50 but under 5.00.....	1,136	1,305	873	145	1,135	1,471	1,474	164
4.00 but under 4.50.....	603	866	746	161	477	1,145	1,231	278
3.50 but under 4.00.....	477	1,112	880	493	223	401	1,394	433
3.00 but under 3.50.....	776	875	1,230	530	185	823	2,051	772
2.50 but under 3.00.....	136	282	764	545	.....	262	1,105	626
2.00 but under 2.50.....	73	137	389	326	.....	201	676	403
1.50 but under 2.00.....	12	34	68	102	.....	54	97	206
Under \$1.50 .....	.....	1	6	38	.....	9	3	74
Totals	81,527	8,098	5,766	2,476	80,605	7,090	8,976	3,082

PROPORTION OF BUSINESS DONE—BY INDUSTRIES.

1896 AND 1897.

The table below shows the average proportion of business done in different industries. Greatest capacity or maximum production has been considered as 100 per cent. The percentage given below indicate the proportion of business done on that basis. Comparison between the two years with the relative increase or decrease is noted.

INDUSTRIES.	No. of establishments.	AVERAGE PRO- PORTION OF BUS- INESS DONE.		INCREASE (+) OR DECREASE (-) IN 1897.	
		1896.	1897.	Propor- tion.	Percent- ages.
Agricultural implements	31	72.50	70.20	- 02.30	- 3.16
Artisans' tools, hardware specialties...	10	75.31	70.10	- 05.21	- 6.91
Beverages (not spir-uous).....	18	62.00	64.83	+ 02.83	+ 4.56
Bicycles, tricycles, etc.....	7	58.12	58.60	+ 00.48	+ 0.86
Boots and shoes	24	72.62	76.29	+ 03.76	+ 5.20
Boxes (wooden and paper).....	29	57.15	78.19	+ 21.04	+ 36.81
Brick, tile and sewer pipe.....	23	50.41	49.75	- 00.72	- 1.42
Brooms and brushes, etc.....	19	67.88	68.95	+ 01.07	+ 1.57
Burial cases, caskets, coffins, etc.....	4	75.37	76.25	+ 00.88	+ 1.16
Cement, lime, plaster, etc.....	12	70.67	62.17	- 08.50	- 12.02
Chairs	13	70.59	71.92	+ 01.33	+ 1.88
Chemical preparations	13	70.00	71.25	+ 01.25	+ 1.78
Cigars, snuff and tobacco.....	54	75.30	79.04	+ 03.74	+ 4.96
Clothing	2	71.82	77.04	+ 05.22	+ 7.26
Coal and wood	28	75.57	77.61	+ 02.04	+ 2.70
Confectioneries, crackers, etc.....	12	73.84	76.50	+ 02.66	+ 3.60
Cooking and heating apparatus	24	60.40	64.76	+ 04.36	+ 7.21
Cooperage	21	71.35	64.24	- 07.11	- 9.96
Cotton and linen goods.....	5	75.78	81.40	+ 05.62	+ 7.41
Electrical and gas apparatus and sup- plies	21	85.69	72.86	- 12.83	- 14.97
Electrical and gas lighting power and street railways	49	70.00	71.73	+ 01.73	+ 2.46
Fancy articles	8	53.40	61.12	+ 07.72	+ 14.45
Flour and feed	86	70.37	75.27	+ 04.90	+ 6.96
Food preparations	31	64.30	67.00	+ 02.70	+ 4.20
Furniture	42	72.55	67.14	- 05.41	- 7.45
Furs, gloves and mittens	11	88.77	75.82	- 12.95	- 14.58
Grain and warehouse men.....	12	60.15	61.10	+ 00.95	+ 1.57
Iron goods (malleable).....	25	65.38	68.30	+ 02.92	+ 4.46
Iron (pig)	2	57.00	55.50	- 01.50	- 2.63
Knit goods	15	62.69	71.20	+ 08.51	+ 13.57
Lager beer	71	61.35	64.34	+ 02.99	+ 4.87
Laundries	75	75.00	70.00	- 05.00	- 6.66
Leather	33	73.69	79.61	+ 05.92	+ 8.03
Lithographing and engraving.....	7	90.50	81.12	- 09.38	- 10.36
Lumber, lath and shingles.....	168	61.20	70.00	+ 08.80	+ 14.32
Malt	20	85.51	88.75	+ 03.24	+ 3.78
Machines and machinery.....	86	64.84	68.01	+ 03.17	+ 4.88
Mixed textiles	9	70.87	69.50	- 01.37	- 1.93
Office and saloon fixtures, etc.....	15	79.11	70.78	- 08.33	- 10.51
Paints, oils and crude chemicals.....	7	70.37	74.86	+ 04.49	+ 6.33
Paper and pulp.....	34	83.20	83.00	- 00.20	- 0.24
Printers' supplies	4	73.12	75.09	+ 01.97	+ 2.69
Saddlery, harness, etc.....	9	53.87	78.44	+ 24.57	+ 45.60
Sash, doors, blinds and mouldings.....	73	66.25	69.76	+ 03.51	+ 5.29
Sheet metal goods.....	26	70.12	75.00	+ 04.88	+ 6.95
Ship and boat building.....	6	90.37	64.67	- 25.70	- 28.43

PROPORTION OF BUSINESS—BY INDUSTRIES—Continued.

1896 AND 1897.

The table below shows the average proportion of business done in different industries. Greatest capacity or maximum production has been considered as 100 per cent. The percentage given below indicates the proportion of business done on that basis. Comparison between the two years with the relative increase or decrease is noted.

INDUSTRIES.	No of estab- lishments	AVERAGE PRO- PORTION OF BUS- INESS DONE.		INCREASE (+) OR DECREASE (-) IN 1897.	
		1896.	1897.	Propor- tion.	Percent- ages.
Soap, lye and potash.....	9	51.30	78.89	+ 27.59	+ 53.73
Staves and heading.....	21	62.42	74.38	+ 11.96	+ 19.15
Stone (granite, marble, etc.).....	10	62.28	63.10	+ 00.82	+ 1.31
Straw goods	5	72.79	78.00	+ 05.21	+ 7.15
Toys and games	5	65.00	66.20	+ 01.20	+ 1.84
Trunks and valises.....	9	81.31	90.56	+ 09.25	+ 11.37
Vencer	9	65.20	77.56	+ 12.36	+ 18.95
Wagons, carriages and sleighs.....	53	56.75	71.80	+ 15.05	+ 26.51
Woodenware	11	88.30	76.70	- 11.60	- 13.13
Woollen and worsted goods.....	17	58.65	73.29	+ 14.64	+ 24.96
Miscellaneous	13	73.00	72.86	- 00.14	- 0.19
All industries	1,479	69.53	71.80	+ 2.27	+ 3.25

DAYS IN OPERATION—BY INDUSTRIES.

1896 AND 1897.

This table shows the average number of days in operation in each establishment in the industries considered. Comparison is made between the two years, and the increase or decrease is noted by number and percentages.

INDUSTRIES.	No. of establishments	AVERAGE NUMBER OF DAYS IN OPERATION.		INCREASE (+) OR DECREASE (-) IN 1897.	
		1896.	1897.	Days.	Per cent.
Agricultural implements.....	31	276.00	264.22	- 11.78	- 4.26
Artisans' tools and hardware specialties	10	288.78	267.20	- 21.58	- 7.65
Beverages (not spirituous, soft drinks)..	18	269.96	271.19	+ 01.23	+ 0.45
Bicycles, tricycles, etc.....	7	236.00	265.71	+ 29.71	+ 12.58
Boots and shoes	24	262.40	275.12	+ 12.72	+ 4.84
Boxes (wooden and paper).....	29	272.10	286.44	+ 14.34	+ 5.27
Brick, tile and sewer pipe.....	23	154.92	152.65	- 02.27	- 1.46
Brooms, brushes, etc.....	19	242.14	245.26	+ 03.12	+ 1.28
Burial cases, caskets, coffins, etc.....	4	268.00	275.25	+ 07.25	+ 2.70
Cement, lime, plaster, etc.....	12	275.95	253.92	- 22.03	- 7.98
Chairs	13	257.04	272.23	+ 15.19	+ 5.90
Chemical preparations	13	303.24	308.61	+ 05.37	+ 1.77
Cigars, snuff and tobacco.....	54	280.58	284.15	+ 03.57	+ 1.27
Clothing	25	270.78	283.24	+ 12.46	+ 4.60
Coal and wood	28	302.58	303.28	+ 00.70	+ 0.23
Confectioneries, crackers, etc.....	12	278.80	285.53	+ 06.73	+ 2.31
Cooking and heating apparatus.....	24	250.68	274.52	+ 23.84	+ 9.51
Cooperage	21	241.32	236.24	- 05.08	- 2.10
Cotton and linen goods.....	5	240.60	256.80	+ 16.20	+ 6.73
Electrical and gas apparatus and supplies	21	286.62	292.95	+ 06.33	+ 2.20
Electrical and gas lighting, power and street railways.....	49	358.84	361.21	+ 02.39	+ 0.66
Fancy articles	8	228.75	242.00	+ 13.25	+ 5.79
Flour and feed	86	263.66	271.42	+ 07.76	+ 2.94
Food preparations	31	230.72	238.26	+ 07.54	+ 3.26
Furniture	42	271.32	266.74	- 04.58	- 1.68
Furs, gloves and mittens.....	11	294.00	271.91	- 22.09	- 7.51
Grain and warehouse men.....	12	271.98	277.00	+ 05.02	+ 1.84
Iron goods (malleable).....	25	278.74	281.22	+ 02.48	+ 0.88
Iron (pig)	2	204.00	191.00	- 13.00	- 6.37
Knit goods	15	266.57	284.00	+ 17.43	+ 6.54
Lager beer	71	301.37	300.97	- 00.40	- 0.13
Laundries	75	300.28	295.78	- 04.50	- 1.49
Leather	33	280.16	293.03	+ 12.87	+ 4.59
Lithographing and engraving.....	7	306.00	306.00	.....	.....
Lumber, lath and shingles.....	168	190.33	203.91	+ 13.53	+ 7.11
Malt	20	282.12	291.45	+ 09.33	+ 3.30
Machines and machinery	86	272.64	282.88	+ 10.24	+ 3.75
Mixed textiles	9	286.66	270.00	- 16.66	- 5.81
Office and saloon fixtures, etc.....	15	296.45	270.64	- 15.81	- 5.33
Paints, oils and crude chemicals.....	7	258.72	291.14	+ 32.44	+ 12.53
Paper and pulp.....	34	288.78	287.85	- 00.93	- 0.35
Printers' supplies	4	290.30	299.00	+ 08.70	+ 3.00
Railway construction and equipment....	20	303.00	304.19	+ 01.19	+ 0.39
Saddlery, harness, etc.....	9	203.72	287.11	+ 83.39	+ 40.93
Sash, doors, blinds and moulding.....	73	248.02	257.14	+ 09.12	+ 3.67
Sheet metal goods	26	270.08	286.54	+ 16.46	+ 6.09
Ship and boat building.....	6	292.96	212.33	- 80.63	- 27.52
Soap, lye and potash.....	9	210.00	296.22	+ 86.22	+ 41.05

DAYS IN OPERATION—BY INDUSTRIES—Continued.

1896 AND 1897.

This table shows the average number of days in operation in each establishment in the industries considered. Comparison is made between the two years, and the increase or decrease is noted by number and percentages.

INDUSTRIES.	No. of establishments.	AVERAGE NUMBER OF DAYS IN OPERATION.		INCREASE (+) OR DECREASE (—) IN 1897.	
		1896.	1897.	Days.	Per cent.
Staves and heading.....	21	199.50	230.76	+ 31.26	+ 15.66
Stone (granite, marble, etc).....	10	247.72	251.20	+ 03.46	+ 1.39
Straw goods	5	247.60	244.40	— 03.20	— 1.29
Toys and games	5	240.50	245.60	+ 05.10	+ 2.12
Trunks, valises, etc.....	9	268.72	288.33	+ 19.61	+ 7.29
Veneer	9	240.96	263.89	+ 22.93	+ 9.51
Wagons, carriages and sleighs.....	53	241.42	287.35	+ 45.93	+ 19.02
Woodenware	11	277.71	266.50	— 11.21	— 4.04
Woolen and worsted goods.....	17	227.08	268.12	+ 41.04	+ 18.07
Miscellaneous	13	277.38	285.28	+ 07.90	+ 2.84
All industries	1,499	263.40	270.81	+ 7.41	+ 2.81

For the purpose of convenience, and to make them more distinct, we group all the facts relating to an industry together in one industry presentation. Such presentation is given to each of twelve of the more leading industries in the state; another for the twelve industries combined, and a final one for All Industries.

AGRICULTURAL IMPLEMENTS—1896 AND 1897.

Number of establishments, partners, stockholders, etc.	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			No.	Per cent.
Number of establishments	31	31		
Number of private firms	7	8	+ 1	+ 14.28
Number of partners	11	19	+ 8	+ 72.72
Males	11	19	+ 8	+ 72.72
Females				
Number of corporations	24	23	- 1	- 4.16
Number of stockholders	200	236	+ 36	+ 28.00
Males	170	201	+ 31	+ 18.23
Females	30	35	+ 5	+ 16.66
Aggregates: Partners and stockholders....	211	255	+ 44	+ 20.85

Persons employed.

Average number	1,856	1,866	+ 10	+ 0.54
Smallest number	1,517	1,568	+ 51	+ 3.36
Greatest number	2,513	2,386	- 127	- 5.05
Excess of greatest over smallest.....	996	818	- 178	- 17.87

Capital invested.

	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			Amount.	Percentages.
Amount of capital invested....	\$6,247,280	\$7,826,158	+ \$1,578,878	+ 25.27

Stock used—aggregate values.

Total value of stock used.....	\$2,268,950	\$2,174,798	-\$94,152	- 4.15
--------------------------------	-------------	-------------	-----------	--------

Goods made—aggregate values.

Total value of goods made or work done	\$4,529,474	\$4,242,134	-\$287,340	- 6.22
---	-------------	-------------	------------	--------

Persons employed—by months.

Months	1896.			1897.		
	Male.	Fe- male.	Tota..	Male.	Fe- male.	Total
January	2,481	1	2,482	1,864	1	1,865
February	2,488	1	2,489	2,146	1	2,147
March	2,512	1	2,513	2,199	1	2,200
April	2,256	1	2,257	1,999	1	2,000
May	1,925	1	1,926	1,793	1	1,794
June	1,823	1	1,824	1,749	1	1,750
July	1,785	1	1,786	1,716	1	1,717
August	1,556	1	1,557	1,590	1	1,591
September	1,668	1	1,669	1,567	1	1,568
October	1,516	1	1,517	1,685	1	1,686
November	1,636	1	1,637	1,877	1	1,878
December	1,812	1	1,813	2,191	1	2,192

Wages and earnings.

	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			Amount.	Percentages.
Total amount paid in wages.....	\$999,822 00	\$938,930 00	— \$60,892 00	— 6.09
Average yearly earnings	538 70	503 18	— 35 52	— 6.59

Classified weekly earnings.

Classification of weekly earnings.	1896.					1897.				
	Males 18 years of age and over.	Females 15 and over.	Males under 18 years of age.	Females under 18 years of age.	Total.	Males 18 years of age and over.	Females 15 and over.	Males under 18 years of age.	Females under 18 years of age.	Total.
\$25.00 per week and over..	29				29	16				16
20.00 but under \$25.00.....	71				71	17				17
18.00 but under 20.00.....	36				36	32				32
15.00 but under 18.00.....	127				127	98				98
13.00 but under 15.00.....	112				112	189				189
12.00 but under 13.00.....	285				285	225				225
11.00 but under 12.00.....	73				73	147				147
10.00 but under 11.00.....	136				136	142				142
9.00 but under 10.00.....	408				408	417				417
8.00 but under 9.00.....	102				102	195				195
7.00 but under 8.00.....	418				418	363				363
6.00 but under 7.00.....	261		5	1	267	164	1	62		227
5.50 but under 6.00.....	21	1			22	10		3		13
5.00 but under 5.50.....	11		1		12	9		14		23
4.50 but under 5.00.....	78		2		80	32		34		66
4.00 but under 4.50.....	19		3		22	1		14		15
3.50 but under 4.00.....	36		5		41			20		20
3.00 but under 3.50.....	27		5		32	1		19		20
2.50 but under 3.00.....	4				4			3		3
2.00 but under 2.50.....	2		3	1	6			2		2
1.50 but under 2.00.....	1				1					
Under \$1.50			1		1					
Totals	2,257	1	25	2	2,285	2,058	1	171		2,230

Proportion of business done.

Proportion of business done and days in operation.	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			Proportion and days.	Percentages.
Average proportion of business done	72.50	70.20	— 2.30	— 3.16
Average number of days in operation	276.00	264.22	— 11.78	— 4.26

BOOTS AND SHOES—1896 AND 1897.

Number of establishments, partners, stockholders, etc.	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			No.	Per cent.
Number of establishments.....	24	24	.....	.....
Number of private firms.....	10	9	- 1	- 10.
Number of partners.....	18	15	- 3	- 16.66
Males	18	15	- 3	- 16.66
Females .....	.....	.....	.....	.....
Number of corporations.....	14	15	+ 1	+ 7.14
Number of stockholders.....	115	168	+ 53	+ 46.08
Males	108	151	+ 43	+ 39.81
Females	7	17	+ 10	+ 142.85
Aggregates: partners and stockholders.....	133	183	+ 50	+ 37.59

Persons employed.

Average number	2,239	2,299	+ 60	+ 2.67
Smallest number	2,012	2,186	+ 174	+ 8.64
Greatest number	2,435	2,457	+ 22	+ .90
Excess of greatest over smallest.....	423	271	- 152	- 35.93

Capital invested.

	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			Amount.	Percentages.
Amount of capital invested.....	\$1,955,624	\$1,900,423	- \$55,201	- 2.90

Stock used—aggregate values.

Total value of stock used.....	\$1,742,081	\$1,983,766	+ \$241,685	+ 11.84
--------------------------------	-------------	-------------	-------------	---------

Goods made—aggregate values.

Total value of goods made or work done	\$3,018,633	\$3,416,422	+ \$397,789	+ 13.17
---	-------------	-------------	-------------	---------

Persons employed—by months.

Months	1896.			1897.		
	Male.	Fe- male.	Total	Male.	Fe- male.	Total.
January	1,608	773	2,381	1,618	779	2,397
February	1,633	747	2,380	1,630	810	2,440
March	1,580	780	2,360	1,590	793	2,383
April	1,549	746	2,295	1,593	775	2,368
May	1,516	728	2,244	1,575	743	2,318
June	1,438	711	2,209	1,506	714	2,220
July	1,486	686	2,172	1,507	686	2,193
August	1,507	666	2,173	1,547	719	2,266
September	1,484	688	2,172	1,534	719	2,253
October	1,524	690	2,214	1,548	700	2,248
November	1,389	623	2,012	1,501	685	2,186
December	1,538	699	2,237	1,568	743	2,311

Wages and earnings.

	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			Amount.	Percentages.
Total amount paid in wages.....	\$622,611 00	\$686,972 00	+ \$64,361 00	+ 10.33
Average yearly earnings	278 07	298 81	+ 20 74	+ 7.46

Classified weekly earnings.

Classification of weekly earnings.	1896.					1897.				
	Males 18 years of age and over.	Females 18 and over.	Males under 18 years of age.	Females under 18 years of age.	Total.	Males 18 years of age and over.	Females 18 and over.	Males under 18 years of age.	Females under 18 years of age.	Total.
\$25.00 per week and over..	8	.....	.....	.....	8	13	.....	.....	.....	13
20.00 but under \$25.00.....	37	.....	.....	.....	37	34	.....	.....	.....	34
18.00 but under 20.00.....	26	.....	.....	.....	26	29	.....	.....	.....	29
15.00 but under 18.00.....	75	.....	.....	.....	75	79	.....	.....	.....	79
13.00 but under 15.00.....	61	.....	.....	.....	61	55	.....	.....	.....	55
12.00 but under 13.00.....	65	.....	.....	.....	65	90	.....	.....	.....	90
11.00 but under 12.00.....	64	4	.....	.....	68	74	30	.....	.....	104
10.00 but under 11.00.....	69	13	.....	.....	82	75	16	.....	.....	91
9.00 but under 10.00.....	172	15	.....	.....	187	170	20	.....	.....	190
8.00 but under 9.00.....	106	20	.....	.....	126	112	30	.....	.....	142
7.00 but under 8.00.....	141	35	.....	.....	176	111	35	5	.....	151
6.00 but under 7.00.....	115	86	.....	.....	201	111	82	8	2	203
5.50 but under 6.00.....	19	50	.....	.....	69	20	50	1	.....	71
5.00 but under 5.50.....	43	106	3	.....	152	36	106	.....	3	145
4.50 but under 5.00.....	24	92	7	.....	123	15	70	28	1	114
4.00 but under 4.50.....	31	45	37	6	119	20	47	49	9	125
3.50 but under 4.00.....	10	52	16	22	100	3	55	21	32	111
3.00 but under 3.50.....	367	26	57	49	499	.....	32	411	49	492
2.50 but under 3.00.....	14	9	19	38	80	.....	3	21	28	52
2.00 but under 2.50.....	9	14	8	34	65	.....	.....	41	59	100
1.50 but under 2.00.....	11	1	2	15	29	.....	.....	.....	8	8
Under \$1.50 .....	.....	.....	5	.....	5	.....	.....	.....	.....	.....
Totals	1,467	568	154	164	2,353	1,047	576	585	191	2,399

Proportion of business done.

Proportion of business done and days in operation.	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			Proportion and days.	Percentages.
Average proportion of business done	72.62	76.29	+ 3.76	+ 5.20
Average number of days in operation	262.40	275.12	+ 12.72	+ 4.84

FLOUR AND FEED—1896 AND 1897.

Number of establishments, partners, stockholders, etc.	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.			
			No.	Per cent.		
Number of establishments.....	86	86				
Number of private firms.....	58	55	-	3		
Number of partners.....	85	117	+	32		
Males.....	83	112	+	29		
Females.....	2	5	+	3		
Number of corporations.....	28	31	+	3		
Number of stockholders.....	343	477	+	134		
Males.....	293	405	+	112		
Females.....	50	72	+	22		
Aggregates: partners and stockholders.....	428	594	+	166		
<i>Persons employed.</i>						
Average number.....	1,095	1,132	+	37		
Smallest number.....	1,025	1,108	+	83		
Greatest number.....	1,144	1,205	+	61		
Excess of greatest over smallest.....	119	97	-	22		
<i>Capital invested.</i>						
	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.			
			Amount.	Percentages.		
Amount of capital invested.....	\$6,449,116	\$7,411,133	+	\$962,017		
				+ 14.91		
<i>Stock used—aggregate values.</i>						
Total value of stock used.....	\$15,889,410	\$18,724,577	+	\$2,835,167		
				+ 17.84		
<i>Goods made—aggregate values.</i>						
Total value of goods made or work done.....	\$19,186,233	\$22,016,981	+	\$2,830,748		
				+ 14.75		
<i>Persons employed—by months.</i>						
Months	1896.			1897.		
	Male.	Fe- male.	Total.	Male.	Fe- male.	Total.
January.....	1,020	5	1,025	1,103	5	1,108
February.....	1,104	5	1,109	1,109	5	1,114
March.....	1,029	5	1,034	1,105	5	1,110
April.....	1,050	5	1,055	1,125	5	1,130
May.....	1,120	5	1,125	1,122	5	1,127
June.....	1,120	6	1,126	1,133	6	1,139
July.....	1,126	6	1,132	1,135	6	1,141
August.....	1,105	6	1,111	1,125	6	1,131
September.....	1,101	6	1,107	1,123	6	1,129
October.....	1,120	6	1,126	1,160	6	1,166
November.....	1,107	6	1,113	1,165	6	1,171
December.....	1,079	6	1,085	1,118	6	1,124

Wages and earnings.

	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			Amount.	Percentages.
Total amount paid in wages.....	\$547,830 00	\$586,731 00+	\$31,901 00	+ 6.73
Average yearly earnings	500 30	518 31+	18 01	+ 3.59

Classified weekly earnings.

Classification of weekly earnings.	1896.					1897.				
	Males 18 years of age and over.	Females 18 and over.	Males under 18 years of age.	Females under 18 years of age.	Total.	Males 18 years of age and over.	Females 18 and over.	Males under 18 years of age.	Females under 18 years of age.	Total.
\$25.00 per week and over...	28				28	15				15
20.00 but under \$25.00.....	19				19	10				10
18.00 but under 20.00.....	29				29	14				14
15.00 but under 18.00.....	93				93	82				82
13.00 but under 15.00.....	76				76	64				64
12.00 but under 13.00.....	95				95	80				80
11.00 but under 12.00.....	56				56	42				42
10.00 but under 11.00.....	215				215	220				220
9.00 but under 10.00.....	238	1			239	290	1			291
8.00 but under 9.00.....	104	1			105	108	2			110
7.00 but under 8.00.....	114				114	122				122
6.00 but under 7.00.....	49	1	1		51	61		1		62
5.50 but under 6.00.....	5				5	5				5
5.00 but under 5.50.....	8		1		9	7		3		10
4.50 but under 5.00.....	4		1		5	5		1		6
4.00 but under 4.50.....		2			2	1				1
3.50 but under 4.00.....	1	2			3		1		1	3
3.00 but under 3.50.....	3				3	4	4	1	1	10
2.50 but under 3.00.....							1			1
2.00 but under 2.50.....										
1.50 but under 2.00.....										
Under \$1.50.....										
Totals	1,137	7	3		1,147	1,130	9	7	2	1,148

Proportion of business done.

Proportion of business done and days in operation.	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			Proportion and days.	Percentages.
Average proportion of business done	70.37	75.27	+ 4.90	+ 6.96
Average number of days in operation	263.66	271.42	+ 7.76	+ 2.94

FOOD PREPARATIONS—1896 AND 1897.

Number of establishments, partners, stockholders, etc.	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			No.	Per cent.
Number of establishments.....	31	31		
Number of private firms.....	14	17	+ 3	+ 21.42
Number of partners.....	44	54	+ 10	+ 22.72
Males	43	53	+ 10	+ 23.25
Females	1	1		
Number of corporations.....	17	14	- 3	- 17.64
Number of stockholders.....	80	67	- 13	- 16.25
Males	77	62	- 15	- 19.48
Females	3	5	+ 2	+ 66.66
Aggregates: partners and stockholders.....	124	121	- 3	- 2.42

Persons employed.

Average number	1,981	2,118	+ 137	+ 6.91
Smallest number	1,525	1,517	- 8	- .52
Greatest number	3,887	4,317	+ 430	+ 11.07
Excess of greatest over smallest.....	2,362	2,800	+ 438	+ 18.54

Capital invested.

	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			Amount.	Percentages.
Amount of capital invested.....	\$4,117,091	\$4,751,285	+ \$634,194	+ 15.40

Stock used—aggregate values.

Total value of stock used.....	\$10,173,349	\$11,338,905	+ \$1,165,556	+ 11.45
--------------------------------	--------------	--------------	---------------	---------

Goods made—aggregate values.

Total value of goods made or work done	\$12,583,578	\$13,717,083	+ \$1,133,505	+ 9.00
---	--------------	--------------	---------------	--------

Persons employed—by months.

Months	1896.			1897.		
	Male.	Fe- male.	Total.	Male.	Fe- male.	Total.
January	1,656	110	1,766	1,710	111	1,821
February	1,557	121	1,678	1,613	122	1,735
March	1,502	97	1,599	1,500	127	1,627
April	1,424	101	1,525	1,387	130	1,517
May	1,474	104	1,578	1,419	131	1,550
June	2,101	367	2,468	1,452	141	1,593
July	2,152	479	2,631	2,269	892	3,161
August	1,948	432	2,380	2,392	1,215	3,607
September	1,656	260	1,916	2,000	945	2,945
October	1,630	144	1,774	1,836	376	2,212
November	1,548	150	1,698	1,646	137	1,783
December	1,635	123	1,758	1,742	121	1,863

STATISTICS OF MANUFACTURES.

635

Wages and earnings.

	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			Amount.	Percentages.
Total amount paid in wages.....	\$852,232 00	\$898,879 00	+	46,597 00
Average yearly earnings.....	430 23	424 40	-	5.83
			+	5.46
			-	1.35

Classified weekly earnings.

Classification of weekly earnings.	1896.					1897.				
	Males 18 years of age and over.	Females 18 and over.	Males under 18 years of age.	Females under 18 years of age.	Total.	Males 18 years of age and over.	Females 18 and over.	Males under 18 years of age.	Females under 18 years of age.	Total.
	\$25.00 per week and over.....	29	29	9
20.00 but under \$25.00.....	62	.....	.....	.....	62	27	.....	.....	.....	27
18.00 but under 20.00.....	57	.....	.....	.....	57	37	.....	.....	.....	37
15.00 but under 18.00.....	64	.....	.....	.....	64	53	.....	.....	.....	53
13.00 but under 15.00.....	62	.....	.....	.....	62	87	.....	.....	.....	87
12.00 but under 13.00.....	150	.....	.....	.....	150	125	.....	.....	.....	125
11.00 but under 12.00.....	110	13	.....	.....	123	55	.....	.....	.....	55
10.00 but under 11.00.....	109	.....	.....	.....	109	115	.....	.....	.....	115
9.00 but under 10.00.....	282	.....	.....	.....	282	388	.....	.....	.....	388
8.00 but under 9.00.....	191	1	.....	.....	192	122	.....	.....	.....	122
7.00 but under 8.00.....	396	3	.....	.....	399	608	.....	.....	.....	608
6.00 but under 7.00.....	181	40	13	.....	234	125	1	15	.....	141
5.50 but under 6.00.....	29	10	.....	.....	39	79	1	2	.....	82
5.00 but under 5.50.....	74	34	64	.....	197	113	3	4	.....	120
4.50 but under 5.00.....	107	81	88	54	330	11	314	480	104	909
4.00 but under 4.50.....	39	26	51	25	141	16	280	107	103	506
3.50 but under 4.00.....	10	30	48	89	177	1	5	15	186	207
3.00 but under 3.50.....	1	7	40	69	117	.....	7	21	98	126
2.50 but under 3.00.....	.....	3	9	8	20	.....	5	12	21	38
2.00 but under 2.50.....	.....	.....	.....	.....	.....	.....	5	11	16	32
1.50 but under 2.00.....	.....	.....	.....	.....	.....	.....	.....	8	.....	8
Under \$1.50.....	.....	.....	.....	.....	.....	.....	.....	2	.....	2
Totals.....	1,953	248	313	270	2,784	1,971	621	677	528	3,797

Proportion of business done.

Proportion of business done and days in operation.	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			Proportion and days.	Percentages.
Average proportion of business done.....	64.30	67.00	+	2.70
Average number of days in operation.....	230.72	238.26	+	7.54
			+	4.20
			+	3.26

IRON GOODS (MALLEABLE)—1896 AND 1897.

Number of establishments, partners, stockholders, etc.	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			No.	Per cent.
Number of establishments.....	25.	25	.....	.....
Number of private firms.....	7	7	.....	.....
Number of partners.....	15	14	- 1	- 6.66
Males	15	14	- 1	- 6.66
Females .....	.....	.....	.....	.....
Number of corporations.....	17	17	.....	.....
Number of stockholders.....	134	153	+ 19	+ 14.17
Males	130	148	+ 18	+ 13.84
Females	4	5	+ 1	+ 25.
Aggregates: partners and stockholders.....	149	167	+ 18	+ 12.08

Persons employed.

Average number	3,315	3,350	+ 35	+ 1.05
Smallest number	3,069	2,594	- 475	- 15.47
Greatest number	3,654	4,084	+ 430	+ 11.76
Excess of greatest over smallest.....	585	1,490	+ 905	+ 154.70

Capital invested.

	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			Amount.	Percentages.
Amount of capital invested.....	\$4,223,641	\$4,427,480	+ \$203,839	+ 4.82

Stock used—aggregate values.

Total value of stock used.....	\$2,753,694	\$3,010,246	+ \$256,552	+ 9.31
--------------------------------	-------------	-------------	-------------	--------

Goods made—aggregate values.

Total value of goods made or work done	\$6,183,803	\$6,344,249	+ \$158,446	+ 2.56
---	-------------	-------------	-------------	--------

Persons employed—by months.

Month.	1896.			1897.		
	Male.	Fe- male.	Total.	Male.	Fe- male.	Total.
January	3,260	.....	3,260	2,791	15	2,806
February	3,410	.....	3,410	3,357	8	3,365
March	3,360	.....	3,360	3,309	10	3,319
April	3,416	.....	3,416	3,191	11	3,202
May	3,567	.....	3,567	3,060	12	3,072
June	3,517	.....	3,517	3,342	12	3,354
July	3,087	.....	3,087	2,579	15	2,594
August	3,198	.....	3,198	3,233	23	3,256
September	3,069	.....	3,069	3,655	23	3,678
October	3,420	.....	3,420	4,054	23	4,077
November	3,380	.....	3,380	3,857	27	3,884
December	3,096	.....	3,096	3,572	19	3,591

Wages and earnings.

	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			Amount.	Percentages.
Total amount paid in wages.....	\$1,484,112	\$1,518,760 +	\$34,648 00	+ 2.33
Average yearly earnings.....	447 69	453 36 +	5.67	+ 1.26

Classified weekly earnings.

Classification of weekly earnings.	1896.					1897.				
	Males 15 years of age and over.	Females 15 and over.	Males under 15 years of age.	Females under 15 years of age.	Total.	Males 15 years of age and over.	Females 15 and over.	Males under 15 years of age.	Females under 15 years of age.	Total.
\$25.00 per week and over...	133				133	86				86
20.00 but under \$25.00.....	64				64	57				57
18.00 but under 20.00.....	96				96	63				63
15.00 but under 18.00.....	218				218	186				186
13.00 but under 15.00.....	208				208	161				161
12.00 but under 13.00.....	254				254	312				312
11.00 but under 12.00.....	159				159	186				186
10.00 but under 11.00.....	180				180	308	3			311
9.00 but under 10.00.....	360				360	382				382
8.00 but under 9.00.....	329				229	418				418
7.00 but under 8.00.....	387		3		390	673	9	1		683
6.00 but under 7.00.....	585		13		598	477	5	6		488
5.50 but under 6.00.....	58		19		77	78		22		100
5.00 but under 5.50.....	74		20		94	61	3	28		92
4.50 but under 5.00.....	9		52		61	63		71		134
4.00 but under 4.50.....	4		41		45	15		72		87
3.50 but under 4.00.....	1		78		79	1		110		111
3.00 but under 3.50.....	7		76		83	3	2	73	2	80
2.50 but under 3.00.....			8					4		4
2.00 but under 2.50.....			3		3			8		8
1.50 but under 2.00.....								6		6
Under \$1.50.....										
Totals.....	3,026		313		3,339	3,530	22	401	2	3,955

Proportion of business done.

Proportion of business done and days in operation.	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.		
			Proportion and days.	Percentages.	
Aver. proportion of business done	65.38	68.30	+	2.92	+ 4.46
Aver. number of days in operation	278.74	281.22	+	2.48	+ .88

LAGER BEER—1896 AND 1897.

Number of establishments, partners, stockholders, etc.	1896.	1897.	INCREASE (+) OR DECREASE (—) IN 1897.			
			No.	Per cent.		
Number of establishments	71	71				
Number of private firms	40	40				
Number of partners	88	60	— 28	— 31.81		
Males	85	57	— 28	— 32.94		
Females	3	3				
Number of corporations	31	31				
Number of stockholders	387	446	+ 59	+ 15.24		
Males	347	397	+ 50	+ 14.40		
Females	40	49	+ 9	+ 22.50		
Aggregates: Partners and stockholders.....	475	506	+ 31	+ 6.52		
<i>Persons employed.</i>						
Average number	3,133	3,108	— 25	— 0.79		
Smallest number	3,032	2,984	— 148	— 4.88		
Greatest number	3,244	3,352	+ 108	+ 3.94		
Excess of greatest over smallest	212	368	+ 156	+ 73.58		
<i>Capital invested.</i>						
	1896.	1897.	INCREASE (+) OR DECREASE (—) IN 1897.			
			Amount.	Percentages.		
Amount of capital invested.....	\$33,943,545	\$35,539,091	+ \$1,595,546	+ 4.66		
<i>Stock used—aggregate values.</i>						
Total value of stock used.....	\$3,270,795	\$3,702,671	+ \$431,876	+ 13.20		
<i>Goods made—aggregate values.</i>						
Total value of goods made or work done	\$15,394,071	\$16,945,217	+ \$1,551,146	+ 10.07		
<i>Persons employed—by months.</i>						
Months	1896			1897.		
	Male.	Fe- male.	Total	Ma. e.	Fe- male.	Total.
January	2,709	364	3,073	2,796	219	3,015
February	2,719	351	3,100	2,775	209	2,984
March	2,760	390	3,150	2,794	219	3,013
April	2,735	348	3,083	2,838	234	3,072
May	2,790	342	3,132	2,876	269	3,145
June	2,818	347	3,165	2,886	269	3,155
July	2,872	350	3,222	2,960	270	3,230
August	2,881	353	3,234	2,885	270	3,155
September	2,870	322	3,192	2,856	265	3,121
October	2,837	271	3,108	2,843	255	3,098
November	2,823	261	3,084	2,844	219	3,063
December	2,901	255	3,156	3,033	214	3,247

Wages and earnings.

	1893.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			Amount.	Percentages.
Total amount paid in wages.....	\$1,649,640	\$1,686,468	+ \$36,828.00	+ 2.23
Average yearly earnings	\$526.54	\$542.62	+ \$16.08	+ 3.05

Classified weekly earnings.

Classification of weekly earnings.	1896.					1897.				
	Males 18 years of age and over.	Females 16 and over.	Males under 18 years of age.	Females under 18 years of age.	Total.	Males 18 years of age and over.	Females 16 and over.	Males under 18 years of age.	Females under 18 years of age.	Total.
\$25.00 per week and over..	65	.....	.....	.....	65	40	.....	.....	.....	40
20.00 but under \$25.00.....	195	.....	.....	.....	195	40	.....	.....	.....	40
18.00 but under 20.00.....	40	.....	.....	.....	40	42	.....	.....	.....	42
15.00 but under 18.00.....	551	.....	.....	.....	551	680	.....	.....	.....	680
13.00 but under 15.00.....	478	.....	.....	.....	478	518	.....	.....	.....	518
12.00 but under 13.00.....	385	.....	.....	.....	385	331	.....	.....	.....	331
11.00 but under 12.00.....	135	.....	.....	.....	135	183	.....	.....	.....	183
10.00 but under 11.00.....	215	.....	.....	.....	215	219	.....	.....	.....	219
9.00 but under 10.00.....	221	.....	.....	.....	221	229	.....	.....	.....	229
8.00 but under 9.00.....	99	.....	.....	.....	99	73	.....	.....	.....	73
7.00 but under 8.00.....	84	2	.....	.....	86	128	2	.....	.....	130
6.00 but under 7.00.....	87	2	.....	.....	89	65	7	2	.....	74
5.50 but under 6.00.....	12	.....	9	.....	21	27	.....	.....	.....	35
5.00 but under 5.50.....	29	4	6	3	42	17	2	11	.....	30
4.50 but under 5.00.....	14	2	8	.....	24	14	.....	54	.....	68
4.00 but under 4.50.....	10	68	18	.....	96	19	72	58	.....	149
3.50 but under 4.00.....	8	162	61	.....	231	23	1	75	.....	99
3.00 but under 3.50.....	7	24	49	53	133	.....	11	50	22	83
2.50 but under 3.00.....	.....	.....	35	44	79	.....	7	8	75	90
2.00 but under 2.50.....	.....	.....	.....	56	56	.....	21	52	.....	73
1.50 but under 2.00.....	.....	.....	.....	.....	.....	.....	.....	.....	3	3
Under \$1.50 .....	.....	.....	.....	.....	.....	.....	.....	.....	6	6
Totals	2,635	264	186	156	3,241	2,648	123	318	106	3,195

Proportion of business done.

Proportion of business done and days in operation.	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			Proportion and days.	Percentages.
Average proportion of business done	61.35	64.34	+ 2.99	+ 4.87
Average number of days in operation	301.37	300.97	- .40	- 0.13

LEATHER—1896 AND 1897.

Number of establishments, partners, stockholders, etc.	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			No.	Per cent.
Number of establishments.....	33	33	.....	.....
Number of private firms	19	19	.....	.....
Number of partners	34	79	+ 45	+ 13.23
Males	34	79	+ 45	+ 13.23
Females .....	.....	.....	.....	.....
Number of corporations	14	14	.....	.....
Number of stockholders	1,731	1,744	+ 13	+ 0.72
Males	1,464	1,460	- 4	- 0.27
Females	267	284	+ 17	+ 6.32
Aggregates: Partners and stockholders.....	1,765	1,823	+ 38	+ 2.15

Persons employed.

Average number	4,340	4,754	+ 414	+ 9.53
Smallest number	4,075	4,201	+ 126	+ 3.09
Greatest number	4,872	5,329	+ 457	+ 9.38
Excess of greatest over smallest.....	797	1,128	+ 331	+ 41.53

Capital invested.

	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			Amount.	Percentages.
Amount of capital invested	\$10,394,318	\$12,124,012	+ \$1,729,694	+ 16.64

Stock used—aggregate values.

Total value of stock used.....	\$9,789,314	\$11,320,816	+ \$1,531,502	+ 15.64
--------------------------------	-------------	--------------	---------------	---------

Goods made—aggregate values.

Total value of goods made and work done	\$13,445,346	\$15,153,361	+ \$1,708,015	+ 12.70
--	--------------	--------------	---------------	---------

Persons employed—by months.

Month.	1896.			1897.		
	Male.	Fe- male.	Total.	Male.	Fe- male.	Total.
January	3,839	236	4,075	3,936	265	4,201
February	3,858	238	4,096	4,072	267	4,339
March	3,837	238	4,075	4,119	267	4,386
April	4,104	41	4,145	4,156	269	4,425
May	4,178	248	4,426	4,768	278	5,046
June	4,218	247	4,465	4,937	275	5,212
July	4,519	244	4,763	5,055	274	5,329
August	4,294	245	4,539	4,487	275	4,762
September	4,223	246	4,469	4,555	276	4,831
October	4,150	253	4,403	4,676	281	4,957
November	4,065	252	4,317	4,596	281	4,877
December	4,063	250	4,313	4,400	280	4,680

STATISTICS OF MANUFACTURES.

641

Wages and earnings.

	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			Amount.	Percentages.
Total amount paid in wages.....	\$1,790,571	\$2,028,342	+ \$237,771.00	+ 13.23
Average yearly earnings	\$412.57	\$426.66	+ \$14.09	+ 3.41

Classified weekly earnings.

Classification of weekly earnings.	1896.					1897.				
	Males 18 years of age and over.	Females 18 and over.	Males under 18 years of age.	Females under 18 years of age.	Total.	Males 18 years of age and over.	Females 18 and over.	Males under 18 years of age.	Females under 18 years of age.	Total.
\$25.00 per week and over....	19				19	18				18
20.00 but under \$25.00.....	16				16	25				25
18.00 but under 20.00.....	59				59	29				29
15.00 but under 18.00.....	128				128	97				97
13.00 but under 15.00.....	159				159	177				177
12.00 but under 13.00.....	276				276	232				232
11.00 but under 12.00.....	171				171	200				200
10.00 but under 11.00.....	324				324	212				212
9.00 but under 10.00.....	892	54			946	900				900
8.00 but under 9.00.....	943				943	1,191				1,191
7.00 but under 8.00.....	706		1		707	870				872
6.00 but under 7.00.....	317				317	305	25	35		365
5.50 but under 6.00.....	14				14	33	25	10		68
5.00 but under 5.50.....	42	55	5		102	55	46	9		110
4.50 but under 5.00.....	16	1	5	1	23	23	51	15		89
4.00 but under 4.50.....	20		44	1	65	35				67
3.50 but under 4.00.....	6		37	1	44		20	28	6	54
3.00 but under 3.50.....	20	3	48		71	7	18	55	25	105
2.50 but under 3.00.....	8	5	12	1	26			27	11	38
2.00 but under 2.50.....	2		11	3	16			14	3	17
1.50 but under 2.00.....		1		1	2				1	1
Under \$1.50										
Totals	4,138	119	163	8	4,428	4,409	189	225	46	4,869

Proportion of business done.

Proportion of business done and days in operation.	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			Proportion and days.	Percentages.
Average proportion of business done	73.69	79.61	+ 5.92	+ 8.03
Average number of days in operation	280.16	293.03	+ 12.87	+ 4.59

LUMBER, LATH AND SHINGLES—1896 AND 1897.

Number of establishments, partners, stockholders, etc.	1896.	1897.	INCREASE (+) OR DECREASE (—) IN 1897.	
			No.	Per cent.
Number of establishments	168	168	.....	.....
Number of private firms.....*	*67	*66	— 1	— 1.50
Number of partners	96	105	+ 9	+ 9.37
Males	96	103	+ 7	+ 7.29
Females .....	.....	2	.....	.....
Number of corporations.....	*100	*100	+ 1	+ 1.00
Number of stockholders	541	632	+ 91	+ 16.82
Males	453	548	+ 95	+ 20.97
Females	88	84	— 4	— 4.54
Aggregates: Partners and stockholders.....	637	737	+ 100	+ 15.70

*Not reported.

Persons employed.

Average number	11,542	11,827	+ 285	+ 2.46
Smallest number	6,313	5,195	— 1,118	— 17.70
Greatest number	17,900	19,706	+ 1,806	+ 10.08
Excess of greatest over smallest	11,587	14,511	+ 2,924	+ 25.23

Capital invested.

	1896.	1897.	INCREASE (+) OR DECREASE (—) IN 1897.	
			Amount.	Percentages.
Amount of capital invested.....	\$44,989,633	\$45,642,002	+ \$652,369	+ 1.45

Stock used—aggregate values.

Total value of stock used.....	\$9,861,062	\$12,187,522	+ \$2,326,460	+ 23.59
--------------------------------	-------------	--------------	---------------	---------

Goods made—aggregate values.

Total value of goods made or work done	\$18,322,764	\$22,043,162	+ \$3,720,398	+ 20.30
---	--------------	--------------	---------------	---------

Persons employed—by months.

Month.	1896.			1897.		
	Male.	Fe- male.	Total	Male.	Fe- male.	Total.
January	7,954	34	7,988	5,167	28	5,195
February	8,394	34	8,428	5,825	28	5,853
March	8,379	49	8,428	6,861	33	6,894
April	12,737	74	12,811	12,563	67	12,630
May	15,347	116	15,463	15,820	74	15,894
June	16,093	116	16,209	16,686	87	16,773
July	16,138	131	16,319	16,280	99	16,379
August	14,993	142	15,135	15,933	99	16,032
September	12,699	82	12,781	15,514	82	15,596
October	10,421	67	10,488	14,237	80	14,317
November	8,117	26	8,143	10,331	54	10,385
December	6,292	21	6,313	5,927	29	5,956

STATISTICS OF MANUFACTURES.

643

Wages and earnings.

	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			Amount.	Percentages.
Total amount paid in wages	\$3,904,245	\$4,566,264	+	\$662,019
Average yearly earnings	\$338.26	\$386.09	+	\$47.83
				16.95
				14.14

Classified weekly earnings.

Classification of weekly earnings.	1896.					1897.				
	Males 18 years of age and over.	Females 18 and over.	Males under 18 years of age.	Females under 18 years of age.	Total.	Males 18 years of age and over.	Females 18 and over.	Males under 18 years of age.	Females under 18 years of age.	Total.
\$25.00 per week and over.....	221	....	....	....	221	226	....	....	....	226
20.00 but under \$25.00	265	....	....	....	265	265	....	....	....	228
18.00 but under 20.00	201	....	....	....	201	178	....	....	....	178
15.00 but under 18.00	346	....	....	....	346	319	....	....	....	319
13.00 but under 15.00	378	....	....	....	378	381	....	....	....	381
12.00 but under 13.00	564	....	....	....	564	596	....	....	....	596
11.00 but under 12.00	284	2	....	....	286	496	....	....	....	436
10.00 but under 11.00	797	4	....	....	801	844	....	....	....	852
9.00 but under 10.00	2,470	1	....	....	2,471	2,856	....	....	....	2,858
8.00 but under 9.00	3,297	4	....	....	3,301	3,916	....	....	....	3,920
7.00 but under 8.00	5,515	8	16	....	5,537	4,494	10	16	2	4,522
6.00 but under 7.00	1,802	15	29	2	1,848	1,668	21	44	....	1,733
5.50 but under 6.00	181	35	35	....	251	139	....	38	....	177
5.00 but under 5.50	102	31	23	....	156	151	34	26	....	211
4.50 but under 5.00	97	9	83	....	193	175	5	130	....	310
4.00 but under 4.50	94	4	35	4	133	12	2	64	....	78
3.50 but under 4.00	21	8	51	....	80	13	....	92	....	105
3.00 but under 3.50	2	1	101	....	104	6	4	124	....	134
2.50 but under 3.00	1	2	79	3	84	....	7	65	4	76
2.00 but under 2.50	1	7	29	....	37	....	5	30	2	37
1.50 but under 2.00 .....	....	1	....	....	1	....	....	2	....	2
Under \$1.50 .....	....	....	....	....	....	....	....	....	....	....
Totals.....	16,638	130	481	9	17,258	16,638	102	631	8	17,379

Proportion of business done.

Proportion of business done and days in operation.	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			Proportion and days.	Percentages.
Average proportion of business done	61.20	70.00	+	8.80
Average number of days in operation.	190.38	203.91	+	13.53
				14.37
				7.11

LABOR AND INDUSTRIAL STATISTICS.

MACHINES AND MACHINERY—1896 AND 1897.

Number of establishments, partners, stockholders, etc.	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			No.	Per cent.
Number of establishments	86	86		
Number of private firms.....	45	45		
Number of partners.....	73	74	+ 1	+ 1.37
Males	73	73		
Females.....		1		
Number of corporations*.....	39	39		
Number of stockholders.....	222	254	+ 32	+ 14.41
Males	197	227	+ 30	+ 15.22
Females.....	25	27	+ 2	+ 8.00
Aggregates: Partners and stockholders.....	295	328	+ 33	+ 11.19

*Two establishments not reported.

Persons employed.

Average number	4,317	4,486	+ 169	+ 3.91
Smallest number	3,792	4,201	+ 409	+ 10.78
Greatest number	4,921	5,256	+ 335	+ 6.80
Excess of greatest over smallest.....	1,129	1,055	- 74	- 6.55

Capital invested

	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			Amount.	Percentages.
Amount of capital invested.....	\$8,244,923	\$9,038,030	+ \$793,107	+ 8.77

Stock used—aggregate values.

Total value of stock used.....	\$3,059,369	\$3,333,014	+ \$273,645	+ 8.94
--------------------------------	-------------	-------------	-------------	--------

Goods made—aggregate values.

Total value of goods made or work done.....	\$7,662,023	\$8,155,581	+ \$493,558	+ 6.44
--	-------------	-------------	-------------	--------

Persons employed—by months.

Months.	1896.			1897.		
	Male.	Fe- male.	Total.	Male.	Fe- male.	Total.
January	4,609	15	4,624	4,184	17	4,201
February	4,386	15	4,401	4,320	18	4,338
March	4,638	15	4,653	4,453	17	4,470
April.....	4,693	15	4,708	4,486	17	4,503
May.....	4,530	15	4,545	4,438	18	4,456
June.....	4,360	15	4,375	4,464	18	4,482
July.....	4,314	16	4,330	4,613	19	4,632
August.....	4,316	16	4,332	4,661	19	4,680
September	4,147	16	4,163	4,688	18	4,706
October.....	4,022	16	4,038	4,535	18	4,553
November	3,828	15	3,843	4,434	17	4,451
December.....	3,778	14	3,792	4,346	17	4,363

Wages and earnings.

	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			Amount.	Percentages.
Total amount paid in wages.....	\$2,195,742	\$2,343,671	+	6.73
Average yearly earnings.....	\$508.63	\$522.44	+	2.71

Classified weekly earnings.

Classification of weekly earnings.	1896.					1897.				
	Males 18 years of age and over.	Females 18 and over.	Males under 18 years of age.	Females under 18 years of age.	Total.	Males 18 years of age and over.	Females 18 and over.	Males under 18 years of age.	Females under 18 years of age.	Total.
25.00 per week and over	61				61	56				56
20.00 but under \$25.00.....	103				103	87				87
18.00 but under 20.00.....	159				159	165				165
15.00 but under 18.00.....	508				508	440				440
13.00 but under 15.00.....	482				482	636				636
12.00 but under 13.00.....	498				498	445				445
11.00 but under 12.00.....	228	2			230	102	1			103
10.00 but under 11.00.....	393	2			395	429	1			430
9.00 but under 10.00.....	628	1			629	483	1			484
8.00 but under 9.00.....	441	1			442	508				508
7.00 but under 8.00.....	305		1		306	504		1		505
6.00 but under 7.00.....	190	3	3		198	191	6	3		200
5.50 but under 6.00.....	30	1	8		39	35		5		40
5.00 but under 5.50.....	45	3	7		55	41	5	18		64
4.50 but under 5.00.....	56		27	2	85	46		33		79
4.00 but under 4.50.....	17		19		36	11	3	54		68
3.50 but under 4.00.....	29		33		62			48		48
3.00 but under 3.50.....	40		65		105	2		103		105
2.50 but under 3.00.....	4		6		10			12		12
2.00 but under 2.50.....	6		7		13			17	1	18
1.50 but under 2.00.....								1		1
Under \$1.50										
Totals	4,223	13	176	4	4,416	4,181	17	295	1	4,494

Proportion of business done.

Proportion of business done and days in operation.	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			Proportion and days.	Percentages.
Average proportion of business done.....	64.84	68.01	+	4.88
Average number of days in operation.....	272.64	282.88	+	3.75

PAPER AND PULP—1896 AND 1897.

Number of establishments, partners, stockholders, etc.	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			No.	Per cent.
Number of establishments	34	34		
Number of private firms.....	*4	3	- 1	- 25.
Number of partners.....	5	3	- 2	- 40.
Males.....	5	3	- 2	- 40.
Females.....				
Number of corporations.....	*27	28	+ 1	+ 3.70
Number of stockholders.....	184	174	- 10	- 5.43
Males.....	180	156	- 24	- 13.33
Females.....	4	18	+ 14	+ 3.50
Aggregates: partners and stockholders.....	189	177	- 12	- 6.34

*Three establishments not reported.

Persons employed.

Average number	3,117	3,152	+ 35	+ 1.12
Smallest number	2,774	2,893	+ 119	+ 4.29
Greatest number.....	3,687	3,716	+ 49	+ 1.33
Excess of greatest over smallest.....	893	823	- 70	- 8.17

Capital invested.

	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			Amount.	Percentages.
Amount of capital invested.....	\$8,224,977	\$9,014,723	+ \$789,746	+ 9.60

Stock used—aggregate values.

Total value of stock used	\$3,392,882	\$3,481,577	+ \$88,695	+ 2.61
---------------------------------	-------------	-------------	------------	--------

Goods made—aggregate values.

Total value of goods made or work done.....	\$6,592,166	\$6,555,806	- \$36,360	- 0.55
--	-------------	-------------	------------	--------

Persons employed — by months.

Months.	1896.			1897.		
	Male.	Fe- male	Total.	Male.	Fe- male.	Total.
January.....	2,400	680	3,080	2,430	620	3,050
February	2,452	704	3,156	2,452	624	3,076
March.....	2,604	757	3,361	2,646	628	3,274
April.....	2,653	704	3,357	2,589	633	3,222
May.....	2,727	678	3,405	2,628	636	3,264
June.....	2,643	659	3,302	2,549	625	3,174
July.....	2,453	486	2,939	2,426	637	3,063
August.....	2,364	502	2,866	2,289	604	2,893
September.....	2,270	504	2,774	2,401	603	3,004
October.....	2,551	646	3,197	2,615	629	3,244
November.....	2,613	651	3,264	2,646	665	3,311
December.....	2,699	647	3,346	2,602	647	3,249

Wages and earnings.

	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			Amount.	Percentages.
Total amount paid in wages.....	\$1,243,243	\$1,240,476	\$2,767 00	— 0.22
Average yearly earnings	398 85	393 71	5 14	— 1.30

Classified weekly earnings.

Classification of weekly earnings.	1896.					1897.				
	Males 18 years of age and over.	Females 16 and over.	Males under 18 years of age.	Females under 18 years of age.	Total.	Males 18 years of age and over.	Females 16 and over.	Males under 18 years of age.	Females under 18 years of age.	Total.
\$25.00 per week and over...	15				15	11				11
20.00 but under \$25.00.....	7				7	5				5
18.00 but under 20.00.....	79				79	82				82
15.00 but under 18.00.....	93				93	94				94
13.00 but under 15.00.....	66				66	82				82
12.00 but under 13.00.....	103				103	101				101
11.00 but under 12.00.....	28				28	46				46
10.00 but under 11.00.....	143				143	143				143
9.00 but under 10.00.....	577				577	641				641
8.00 but under 9.00.....	451				451	232				232
7.00 but under 8.00.....	526	2			528	861	8		1	870
6.00 but under 7.00.....	396	44	4		444	261	43	9	2	315
5.50 but under 6.00.....	42	12	19		73	22	6			28
5.00 but under 5.50.....	33	59	3		95	34	51	6		91
4.50 but under 5.00.....	60	362	27	10	459	21	263	42	23	349
4.00 but under 4.50.....	11	1	1		12	13	46	41		100
3.50 but under 4.00.....	4	19	1	1	25	3	94			97
3.00 but under 3.50.....	3	81	6	8	98	80	32			112
2.50 but under 3.00.....									1	1
2.00 but under 2.50.....	2		1		3	2	1	14		17
1.50 but under 2.00.....		2			2					
Under \$1.50				12	12					
Total	2,628	592	62	31	3,313	2,649	502	225	41	3,417

Proportion of business done.

Proportion of business done and days in operation.	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			Proportion and days.	Percentages.
Average proportion business done	83.20	83.00	— 0.20	— 0.24
Average number days in operation	288.78	287.85	— 0.93	— 0.35

SASH, DOORS, BLINDS, ETC.—1896 AND 1897.

Number of establishments, partners, stockholders, etc.	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			No.	Per cent.
Number of establishments.....	73	73	.....	.....
Number of private firms.....	*44	43	- 1	- 2.27
Number of partners.....	92	91	- 1	- 1.08
Males.....	92	91	- 1	- 1.08
Females.....	.....	.....	.....	.....
Number of corporations.....	*29	30	+ 1	+ 3.45
Number of stockholders.....	178	181	+ 3	+ 1.68
Males.....	161	163	+ 2	+ 1.24
Females.....	17	18	+ 1	+ 5.88
Aggregates: partners and stockholders.....	270	272	+ 2	+ 0.73

*Number not reporting, 3.

Persons employed.

Average number.....	3,207	3,507	+ 300	+ 0.09
Smallest number.....	2,716	2,788	+ 72	+ 2.65
Greatest number.....	3,714	4,015	+ 301	+ 8.10
Excess of greatest over smallest.....	998	1,227	+ 229	+ 22.94

Capital invested.

	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			Amount.	Percentages.
Amount of capital invested.....	\$5,504,932	\$5,541,357	+ \$36,425	+ 0.66

Stock used—aggregate values.

Value of stock used.....	\$2,680,742	\$2,879,007	+ \$198,265	+ 7.39
--------------------------	-------------	-------------	-------------	--------

Goods made—aggregate values.

Total value of goods made or work done.....	\$5,002,045	\$5,260,706	+ \$258,661	+ 5.17
--	-------------	-------------	-------------	--------

Persons employed—by months.

Months	1896			1897		
	Male	Female	Total	Male	Female	Total
January.....	2,681	35	2,716	3,496	38	3,534
February.....	2,800	35	2,835	2,748	40	2,788
March.....	2,922	35	2,957	2,979	40	3,019
April.....	3,418	39	3,457	3,519	44	3,563
May.....	3,543	43	3,586	3,643	43	3,686
June.....	3,545	39	3,584	3,540	44	3,584
July.....	3,646	40	3,686	3,656	46	3,902
August.....	3,397	40	3,437	3,638	45	3,683
September.....	3,221	35	3,256	3,614	40	3,654
October.....	3,107	35	3,142	3,559	39	3,598
November.....	3,017	33	3,050	3,471	38	3,509
December.....	2,749	34	2,783	3,236	38	3,274

Wages and earnings.

	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			Amount.	Percentages.
			Total amount paid in wages.....	\$1,086,510	$1,159,449	+ $72,939 00	+ 6.71
Average yearly earnings.....	338.79	330.61	- 8.18	- 2.41

Classified weekly earnings.

Classification of weekly earnings.	1896.					1897.				
	Males 18 years of age and over.	Females 15 and over.	Males under 18 years of age.	Females under 18 years of age.	Total.	Males 18 years of age and over.	Females 15 and over.	Males under 18 years of age.	Females under 18 years of age.	Total.
	\$25.00 per week and over..	11	11	7
20.00 but under \$25.00.....	23	.....	.....	.....	23	21	.....	.....	.....	21
18.00 but under 20.00.....	36	.....	.....	.....	36	36	.....	.....	.....	36
15.00 but under 18.00.....	104	.....	.....	.....	104	102	.....	.....	.....	102
13.00 but under 15.00.....	133	.....	.....	.....	133	121	.....	.....	.....	121
12.00 but under 13.00.....	221	.....	.....	.....	221	230	.....	.....	.....	230
11.00 but under 12.00.....	39	1	.....	.....	40	59	.....	.....	.....	59
10.00 but under 11.00.....	245	1	.....	.....	246	277	.....	.....	.....	277
9.00 but under 10.00.....	420	1	.....	.....	420	415	1	.....	.....	416
8.00 but under 9.00.....	341	1	.....	.....	342	278	.....	.....	.....	278
7.00 but under 8.00.....	492	5	4	.....	501	492	.....	.....	.....	492
6.00 but under 7.00.....	560	5	8	1	574	736	3	6	.....	745
5.50 but under 6.00.....	104	.....	21	.....	125	33	.....	.....	.....	33
5.00 but under 5.50.....	77	6	22	.....	105	115	1	24	.....	140
4.50 but under 5.00.....	35	.....	33	.....	73	100	.....	87	.....	187
4.00 but under 4.50.....	20	4	41	.....	65	37	3	68	.....	108
3.50 but under 4.00.....	15	10	46	.....	71	34	10	99	.....	143
3.00 but under 3.50.....	39	6	70	.....	115	18	5	134	5	162
2.50 but under 3.00.....	26	.....	58	.....	84	.....	.....	115	1	116
2.00 but under 2.50.....	.....	.....	.....	.....	.....	59	.....	98	14	171
1.50 but under 2.00.....	.....	.....	.....	.....	.....	.....	.....	8	.....	8
Under \$1.50 .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals	2,941	39	308	1	3,289	3,111	82	639	20	3,852

Proportion of business done.

Proportion of business done and days in operation.	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			Proportion and days.	Percentages.
			Average proportion of business done	66.25	69.76	+ 3.51	+ 5.29
Average number days in operation	248.02	257.14	+ 9.12	+ 3.67

WAGONS, CARRIAGES AND SLEIGHS—1896 AND 1897.

Number of establishments, partners, stockholders, etc.	1896.	1897.	INCREASE (+) OR DECREASE (−) IN 1897.	
			No.	Per cent.
Number of establishments.....	53	53	.....	.....
Number of private firms.....	35	36	+ 1	+ 2.85
Number of partners.....	94	116	+ 22	+ 23.40
Males.....	91	112	+ 21	+ 23.07
Females.....	3	4	+ 1	+ 33.33
Number of corporations.....	18	17	− 1	− 5.55
Number of stockholders.....	232	288	+ 4	+ 1.36
Males.....	256	250	− 6	− 2.34
Females.....	36	38	+ 2	+ 5.55
Aggregates: partners and stockholders.....	386	404	+ 18	+ 4.66

Persons employed.

Average number.....	2,084	2,370	+ 286	+ 13.24
Smallest number.....	1,567	2,193	+ 626	+ 40.
Greatest number.....	2,455	2,641	+ 186	+ 7.57
Excess of greatest over smallest.....	888	448	− 440	− 49.54

Capital invested.

	1896.	1897.	INCREASE (+) OR DECREASE (−) IN 1897.	
			Amount.	Percentages.
Amount of capital invested.....	\$4,258,192	\$5,288,915	+ \$1,030,723	+ 24.20

Stock used—aggregate values.

Total value of stock used.....	\$1,522,409	\$2,116,750	+ \$594,341	+ 39.03
--------------------------------	-------------	-------------	-------------	---------

Goods made—aggregate values.

Total value of goods made or work done.....	\$3,121,558	\$4,256,259	+ \$1,134,701	+ 36.67
--	-------------	-------------	---------------	---------

Persons employed—by months.

Months	1896.			1897.		
	Male.	Fe- male.	Total.	Male.	Fe- male.	Total.
January.....	2,079	41	2,120	2,156	42	2,198
February.....	2,157	42	2,199	2,151	42	2,193
March.....	2,260	45	2,305	2,234	42	2,276
April.....	2,239	46	2,285	2,311	44	2,355
May.....	2,381	54	2,435	2,423	44	2,467
June.....	2,370	64	2,434	2,455	45	2,500
July.....	2,322	59	2,381	2,545	43	2,588
August.....	2,036	43	2,079	2,407	35	2,442
September.....	1,732	42	1,774	2,322	32	2,354
October.....	1,789	31	1,820	2,264	30	2,294
November.....	1,559	32	1,591	2,320	32	2,352
December.....	1,535	32	1,567	2,395	37	2,432

Wages and earnings.

	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			Amount.	Percentages.
Total amount paid in wages	\$736,689.00	\$951,241.00	+ \$214,552.00	+ 29.12
Average yearly earnings	353.50	401.37	+ 47.87	+ 13.54

Classified weekly earnings.

Classification of weekly earnings.	1896.					1897.				
	Males 18 years of age and over.	Females 18 and over.	Males under 18 years of age.	Females under 18 years of age.	Total.	Males 18 years of age and over.	Females 18 and over.	Males under 18 years of age.	Females under 18 years of age.	Total.
\$25.00 per week and over	13	.....	.....	.....	13	9	.....	.....	.....	9
20.00 but under \$25.00	21	.....	.....	.....	21	24	.....	.....	.....	24
18.00 but under 20.00	26	.....	.....	.....	26	34	.....	.....	.....	34
15.00 but under 18.00	99	.....	.....	.....	99	120	.....	.....	.....	120
13.00 but under 15.00	90	.....	.....	.....	90	154	.....	.....	.....	154
12.00 but under 13.00	199	.....	.....	.....	199	425	.....	.....	.....	425
11.00 but under 12.00	109	.....	.....	.....	109	200	3	.....	.....	203
10.00 but under 11.00	166	.....	.....	.....	166	398	6	.....	.....	404
9.00 but under 10.00	387	3	.....	.....	390	331	9	.....	.....	340
8.00 but under 9.00	328	.....	.....	.....	328	233	.....	.....	.....	240
7.00 but under 8.00	453	4	1	.....	458	284	2	.....	.....	291
6.00 but under 7.00	163	3	12	.....	178	162	4	13	.....	179
5.50 but under 6.00	51	1	.....	.....	52	35	1	.....	.....	37
5.00 but under 5.50	47	8	14	.....	69	21	.....	13	.....	34
4.50 but under 5.00	25	11	26	.....	62	19	.....	36	.....	55
4.00 but under 4.50	7	1	9	4	21	3	3	16	.....	22
3.50 but under 4.00	22	5	22	.....	49	.....	4	12	.....	16
3.00 but under 3.50	2	5	33	1	41	.....	3	20	1	24
2.50 but under 3.00 .....	.....	1	9	2	12	.....	.....	9	.....	9
2.00 but under 2.50 .....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
1.50 but under 2.00 .....	.....	.....	2	.....	2	.....	.....	1	.....	1
Under \$1.50 .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals	2,208	42	128	7	2,385	2,452	42	127	1	2,622

Proportion of business done.

Proportion of business done and days in operation.	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			Proportion and days.	Percentages.
Average proportion of business done	56.75	71.80	+ 15.05	+ 26.51
Average number of days in operation	241.42	287.35	+ 45.93	+ 19.02

THE TWELVE FOREGOING INDUSTRIES COMBINED.

Number of establishments, partners, stockholders, etc.	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			No.	Per cent.
Number of establishments	715	715	.....	.....
Number of private firms	350	348	- 2	- 0.57
Number of partners	655	747	+ 92	+ 14.12
Males	646	731	+ 85	+ 14.15
Females	9	16	+ 7	+ 77.77
Number of corporations	358	360	+ 2	+ 0.55
Number of stockholders	4,407	4,820	+ 413	+ 9.37
Males	3,836	4,168	+ 332	+ 8.65
Females	571	652	+ 81	+ 14.18
Aggregates: partners and stockholders	5,062	5,567	+ 505	+ 9.96

Twelve not reporting.

Persons employed.

Average number	42,226	44,169	+ 1,943	+ 4.60
Smallest number	33,417	33,428	+ 11	+ .03
Greatest number	54,406	58,464	+ 4,058	+ 7.27
Excess greatest over smallest	20,989	25,036	+ 4,047	+ 19.28

Capital invested.

	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			Amount.	Percentages.
Amount of capital invested.....	\$138,553,272	\$148,504,609	+ \$9,951,327	+ 7.18

Stock used—aggregate values.

Total amount of stock used.....	\$66,404,057	\$76,253,649	+ \$9,849,592	+ 14.83
---------------------------------	--------------	--------------	---------------	---------

Goods made—aggregate values.

Total value of goods made or work done.....	\$115,041,694	\$128,106,961	+ \$13,065,267	+ 11.36
--	---------------	---------------	----------------	---------

Persons employed—by months.

Months.	1896.			1897.		
	Male.	Fe- male.	Total.	Male.	Fe- male.	Total.
January.....	36,296	2,294	38,590	33,251	2,140	35,391
February.....	36,958	2,323	39,281	34,198	2,174	36,372
March.....	37,883	2,412	39,795	35,789	2,182	37,971
April.....	42,274	2,120	44,394	41,757	2,230	43,987
May.....	45,098	2,334	47,432	45,565	2,254	47,819
June.....	46,106	2,572	48,678	46,999	2,237	49,236
July.....	45,950	2,498	48,448	46,941	2,988	49,929
August.....	43,595	2,446	46,041	46,187	3,311	49,498
September.....	40,140	2,202	42,342	45,829	3,010	48,839
October.....	38,087	2,160	40,247	45,012	2,438	47,450
November.....	35,082	2,050	37,132	40,688	2,162	42,850
December.....	33,177	2,082	35,259	36,130	2,152	38,282

Wages and earnings.

	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			Amount.	Percentages.
Total amount paid in wages	\$17,113,294	\$18,606,183	+	\$ 1,492,889
Average yearly earnings.....	405.28	421.25	+	15.97
				8 72
				3.94

Classified weekly earnings.

Classifications of weekly earnings.	1896.					1897.				
	Males 18 years of age and over.	Females 18 and over.	Males under 18 years of age.	Females under 18 years of age.	Total.	Males 18 years of age and over.	Females 18 and over.	Males under 18 years of age.	Females under 18 years of age.	Total.
\$25.00 per week and over.....	632				632	506				506
20.00 but under \$25 00.....	850				850	545				545
18 00 but under 20.00.....	844				844	741				741
15.00 but under 18.00.....	2,406				2,406	2,350				2,350
13.00 but under 15.00.....	2,303				2,303	2,625				2,625
12.00 but under 13.00.....	3,095				3,095	3,192				3,192
11.00 but under 12.00.....	1,662		22		1,684	1,730	34			1,764
10.00 but under 11.00.....	3,167	19			3,186	3,382	34			3,416
9 00 but under 10.00.....	6,976	78			7,052	7,402	34			7,436
8 00 but under 9 00.....	6,783	32	4		6,819	7,366	45			7,431
7 00 but under 8 00.....	9,605	63	27	1	9,693	9,510	65	28	3	9,609
6 00 but under 7 00.....	4,250	190	101	5	4,550	4,328	198	204	4	4,732
5 50 but under 6 00.....	539	116	112		767	516	83	90		689
5 00 but under 5 50.....	543	300	185	28	1,056	660	251	156	3	1,070
4 50 but under 5 00.....	510	562	367	71	1,510	524	703	1,011	128	2,366
4 00 but under 4 50.....	256	167	304	36	763	171	507	558	112	1,348
3 50 but under 4 00.....	187	284	419	113	1,002	75	99	615	225	1,014
3 00 but under 3 50.....	505	147	538	180	1,370	41	166	1,043	203	1,453
2 50 but under 3 00.....	30	20	177	58	285		23	276	141	440
2 00 but under 2 50.....	22	21	62	94	199		33	185	95	313
1 50 but under 2 00.....	12	5	4	16	37			26	4	30
Under \$1.50.....			6	12	18			2	6	8
Totals.....	45,179	2,003	2,328	614	50,124	45,682	2278	4,194	924	53,078

Proportion of business done.

Proportion of business done and days in operation.	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			Proportion and days.	Percentages.
Average proportion of business done	68.04	71.96	+	3.92
Average number of days in operation.....	260.46	270.28	+	9.82
				5.76
				3.77

ALL INDUSTRIES—1896 AND 1897.

Number of establishments, partners, stockholders, etc.	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			No.	Per cent.
Number of establishments	1,245	1,245	.....	.....
Number of private firms	619	625	+ 6	+ 0.96
Number of partners	1,134	1,325	+ 191	+ 16.84
Males	1,104	1,262	+ 158	+ 14.
Females	30	63	+ 33	+ 110.
Number of corporations	614	608	- 6	- 0.97
Number of stockholders	7,214	7,716	+ 502	+ 6.95
Males	6,417	6,769	+ 352	+ 5.48
Females	797	947	+ 150	+ 18.82
Aggregates: partners and stockholders	8,348	9,041	+ 693	+ 18.18

Persons employed.

Average number	80,051	87,534	+ 7,483	+ 9.34
Smallest number	65,569	71,207	+ 5,638	+ 8.59
Greatest number	99,546	109,839	+ 10,293	+ 10.34
Excess of greatest over smallest	33,977	38,632	+ 4,655	+ 13.70

Capital invested.

	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			Amount.	Percentages.
Total amount of capital invested	\$175,905,124	\$189,760,669	+ \$13,855,545	+ 7.87

Stock used—aggregate values.

Total value of stock used	\$87,027,266	\$98,130,070	+ \$11,402,804	+ 12.76
---------------------------------	--------------	--------------	----------------	---------

Goods made—aggregate values.

Total value of goods made or work done	\$155,152,906	\$169,946,673	+ \$14,793,767	+ 9.53
---	---------------	---------------	----------------	--------

Persons employed—by months.

Months.	1896.			1897.		
	Male.	Fe- male.	Total.	Male.	Fe- male.	Total.
January	65,965	9,049	75,014	66,992	8,554	75,546
February	67,895	9,179	77,074	68,967	8,794	77,760
March	68,655	9,579	78,234	71,252	9,246	80,498
April	74,500	9,965	84,465	77,959	9,524	87,483
May	77,872	9,569	87,441	82,573	9,749	92,322
June	78,332	9,579	87,911	83,232	9,500	92,732
July	76,993	9,333	86,326	82,315	10,015	92,330
August	74,191	9,354	83,545	82,131	10,436	92,567
September	70,254	9,099	79,353	82,323	10,295	92,678
October	68,335	9,116	77,451	83,147	9,826	92,973
November	65,806	8,933	74,739	78,657	9,561	88,218
December	62,174	8,626	70,800	73,805	9,454	83,259

Wages and earnings.

	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			Amount.	Percentages.
Total amount paid in wages.....	\$31,749,822	\$36,583,044	+ \$4,833,222	+ 15.22
Average yearly earnings.....	\$386.63	\$416.79	+ \$30.16	+ 7.31

Classified weekly earnings.

Classification of weekly earnings.	1896.					1897.				
	Males 18 years of age and over.	Females 18 and over.	Males under 18 years of age.	Females under 18 years of age.	Total.	Males 18 years of age and over.	Females 18 and over.	Males under 18 years of age.	Females under 18 years of age.	Total.
\$25.00 per week and over..	1,030	.....	.....	.....	1,030	861	.....	.....	.....	861
20.00 but under 25.00.....	1,533	.....	.....	.....	1,533	1,674	.....	.....	.....	1,674
18.00 but under 20.00.....	1,496	.....	.....	.....	1,496	1,632	.....	.....	.....	1,632
15.00 but under 18.00.....	3,990	.....	.....	.....	3,990	3,860	.....	.....	.....	3,860
13.00 but under 15.00.....	3,924	.....	.....	.....	3,924	4,194	.....	.....	.....	4,194
12.00 but under 13.00.....	5,819	1	.....	.....	5,820	7,156	.....	.....	.....	7,156
11.00 but under 12.00.....	2,823	36	.....	.....	2,859	3,193	78	.....	.....	3,271
10.00 but under 11.00.....	5,948	65	.....	.....	6,013	6,117	74	.....	.....	6,191
9.00 but under 10.00.....	17,292	146	.....	.....	17,438	14,357	118	.....	.....	14,475
8.00 but under 9.00.....	9,380	129	.....	.....	9,509	10,321	202	.....	.....	10,523
7.00 but under 8.00.....	14,007	288	65	.....	14,360	14,633	307	133	61	15,134
6.00 but under 7.00.....	8,526	763	212	23	9,524	7,878	738	293	30	8,939
5.50 but under 6.00.....	1,356	598	209	42	2,205	1,515	386	215	11	2,127
5.00 but under 5.50.....	1,190	1,460	324	71	3,045	1,244	821	304	24	2,339
4.50 but under 5.00.....	1,136	1,305	873	145	3,459	1,135	1,471	1,474	164	4,244
4.00 but under 4.50.....	603	866	746	161	2,376	477	1,145	1,231	278	3,131
3.50 but under 4.00.....	477	1,112	880	493	2,962	223	401	1,394	433	2,451
3.00 but under 3.50.....	776	875	1,230	530	3,411	135	823	2,051	772	3,781
2.50 but under 3.00.....	136	282	764	545	1,727	.....	262	1,105	626	1,993
2.00 but under 2.50.....	73	137	389	326	925	.....	201	676	403	1,280
1.50 but under 2.00.....	12	34	68	102	216	.....	54	97	206	357
Under \$1.50.....	.....	1	6	38	45	.....	9	3	74	86
Totals.....	81,527	8098	5,766	2,476	97,867	80,605	7090	8,976	3,082	99,753

Proportion of business done.

Proportion of business done and days in operation.	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			Proportion and days.	Percentages.
Average proportion of business done.....	69.53	71.80	+ 2.27	+ 3.26
Average number days in operation.....	263.40	270.81	+ 7.41	+ 2.81

ANALYSIS.

The analysis following hereafter refers to the statistical presentation found on pages 559 to 655, inclusive, in this volume, and will be reviewed under the same heads. They are based upon the reports from 1,245 identical establishments for the years 1896 and 1897, and so far as they relate to the matter of wages, number of persons employed and time in operation, they are based upon the returns of 1,499 identical establishments for the same two years.

PRIVATE FIRMS AND CORPORATIONS; PARTNERS AND STOCK-
HOLDERS.

On pages 559 to 560 will be found the tables relating to Private Firms and Corporations and Partners and Stockholders. Of 1,245 establishments, each of which made returns for the years 1896 and 1897, twelve establishments omitted or failed for both years,—probably for reasons of their own, to designate under what system they conducted their business. Of the 1,233 establishments for the year 1896, we find 619 private firms and 614 corporations; or expressing it by percentage, 50.20 per cent. were conducted by private firms and 49.80 per cent. by corporations.

For the year 1897 there were 625 private firms and 608 corporations, or 50.69 per cent. of the establishments were managed by private firms and 49.31 per cent. by corporations. Both years show that the management of business was practically evenly divided between private firms and corporations. This fact is worthy of note, for the reason that as a rule the private firms largely predominate.

The comparisons by years and percentages are contained in the following table:

PRIVATE FIRMS AND CORPORATIONS.	NUMBER.		PERCENTAGES.	
	1896.	1897.	1896.	1897.
Private firms	619	625	50.20	50.69
Corporations	614	608	49.80	49.31
Total	1,233	1,233	100.00	100.00

The total number of partners was 1,134 in 1896 and 1,325 in 1897, an increase of 191 or 16.84 per cent.

The next following table shows a classification of partners by sex, for each year:

PARTNERS.	NUMBER.		PERCENTAGES.	
	1896.	1897.	1896.	1897.
Males	1,104	1,262	97.35	95.25
Females	30	63	2.65	4.75
Total	1,134	1,325	100.00	100.00

It will be seen that the women play but a small part in the management of private firms, the men constituting 97.35 per cent. of the whole number in 1896 and 95.25 in 1897.

The number of females, however, more than doubled in the two years, rising from 30 in 1896 to 63 in 1897, or an increase of 110 per cent.

Considering them in relation to the whole number of partners, their proportion was 2.65 per cent. in 1896 and 4.75 in 1897.

The total number of stockholders is shown to be 7,214 in 1896 and 7,716 in 1897, an increase of 502, or 6.96 per cent.

The following table shows a classification of stockholders by sex:

STOCKHOLDERS.	NUMBER.		PERCENTAGES.	
	1896.	1897.	1896.	1897.
Males	6,417	6,769	88.95	87.73
Females	797	947	11.05	12.27
Total	7,214	7,716	100.00	100.00

The number of female stockholders increased from 797 to 947, a gain of 150; or in other words an increase of 18.82 per cent. Their proportion of the whole number of stockholders was 11.05 in 1896 as against 12.27 in 1897.

The next table shows a consolidation of the number of partners and the number of stockholders, and the relative interests occupied by the males and females.

PARTNERS AND STOCKHOLDERS.	NUMBER.		PERCENTAGES.	
	1896.	1897.	1896.	1897.
Males	7,521	8,031	90.09	88.83
Females	827	1,010	9.91	11.17
Total	8,348	9,041	100.00	100.00

The total number of partners and stockholders was 8,348 in 1896 and 9,041 in 1897, an increase of 693, or 8.30 per cent. The males increased 510 in 1897 over 1896, or 6.78 per cent., while the gain by the females was 183 in the same period, or 22.13 per cent.

The effect of this large increase on the part of the females upon the proportion to the total number is a decline in the proportion of the males from 90.09 to 88.83 per cent., or a decrease of 1.26 per cent. This same difference of 1.26 per cent. is, of course, identical with an increase for the females.

A short summary relating to partners and stockholders, with the aggregate and average number of each and their difference, is found in the following table:

CLASSIFICATION.	NUMBER.	
	1896.	1897.
Private firms	619	625
Partners	1,134	1,325
Average number of partners to private firm.....	1.83	2.12
Corporations	614	608
Stockholders	7,214	7,716
Average number of stockholders to corporation.....	11.75	12.69

The average to a private firm was 1.83 in 1896 and 2.12 in 1897, while the average number of stockholders to a corporation was 11.75 in 1896 and 12.69 in 1897. While the number of

private firms increased by six and the number of partners by 191, the increase in the average number of partners to each firm is very small.

On the other hand, we find six less of corporations in 1897 than in 1896, but the numerical increase of stockholders was 502, adding nearly one person to the average number of stockholders to a corporation, and would indicate a wider diffusion of capital as a result of corporate management.

CAPITAL INVESTED.

On page 561 will be found a table where comparison is made between the amount of capital invested in each industry for the year 1896 and 1897. The amounts of increase or decrease are stated both in amounts and percentages. The 1,245 establishments considered returned an aggregate capital of \$175,905,124 in 1896 and \$189,760,669 in 1897, an increase for the latter year of \$13,855,545 or 7.87 per cent.

Industries showing an increase of capital invested in 1897 over 1896 are:

Agricultural Implements. Artisans' Tools and Hardware Specialties. Bicycles, Tricycles, etc. Boxes (Wooden and Paper). Brooms, Brushes, Etc. Burial Cases, Caskets, Coffins, Etc. Cement, Lime, Plaster, Etc. Chairs. Cigars, Snuff and Tobacco. Clothing. Confectionery, Crackers, Etc. Cooperage. Cotton and Linen Goods. Electrical and Gas Apparatus. Flour and Feed. Food Preparations. Furs, Gloves and Mittens. Iron Goods (Malleable). Knit Goods.	Lager Beer. Leather. Lumber, Lath and Shingles. Malt. Machines and Machinery. Paints, Oils and Crude Chemicals. Paper and Pulp. Printers' Supplies. Saddlery, Harness, Etc. Sash, Doors, Blinds, Etc. Ship and Boat Building. Soap, Lye, Potash, Etc. Staves and Heading. Straw Goods. Toys and Games. Trunks, Valises, Etc. Veneer. Wagons, Carriages, Etc. Woodenware. Woolen and Worsted Goods.
--	---

Industries showing a decrease in capital invested in the same period are:

Boots and Shoes. Brick, Tile and Sewer Pipe. Cooking and Heating Apparatus. Furniture.	Office and Saloon Fixtures. Sheet Metal Goods. Stone (Marble and Granite).
---	--

In some of the industries the capital invested shows very little change, and it may be said that it practically remains the same in each year. The increase varies from 0.06 per cent. in ship and boat building to 32.15 in paints, oils and crude chem-

icals. The decrease ranges from 2.14 per cent. in sheet metal goods to 29.02 per cent. in cut stone.

In the following table some of the leading industries in the state are grouped for the purpose of a more comprehensive review. They represent 44.26 per cent. of the 1,245 establishments considered.

INDUSTRIES.	No. of establishments considered	AMOUNT OF CAPITAL INVESTED.		INCREASE (+) OR DECREASE (-) IN 1897.	
		1896.	1897.	Amounts.	Per cent.
Flour and feed.....	86	\$6,449,116	\$7,411,133 +	\$962,017	14.91
Lager beer	71	33,943,545	35,539,091 +	1,595,546	4.66
Leather	33	10,394,318	12,124,012 +	1,729,694	16.64
Lumber, lath and shingles...	168	44,989,633	45,642,002 +	652,369	1.45
Machines and machinery....	86	8,244,923	9,038,030 +	793,107	8.77
Paper and pulp.....	34	8,224,977	9,014,723 +	789,746	9.60
Sash, doors, blinds, etc.....	73	5,504,932	5,541,357 +	36,425	0.66
Other industries	694	58,153,680	65,450,321 +	7,296,641	12.55
All industries	1,245	\$175,905,124	\$189,760,669 +	\$13,855,545	7.87

In the seven industries mentioned in the foregoing table, we find an aggregate capitalization of \$117,751,444 in 1896 and \$124,310,348 in 1897. Expressed in percentages these amounts are 66.94 per cent. of the aggregate capital for 1896 and 65.51 per cent. of the aggregate capital for 1897. It will be noted that they all show an increase, ranging from 0.66 per cent. in sash, doors and blinds to 16.64 per cent. in leather. The other 694 establishments show an aggregate capital of \$58,153,680, as reported for 1896, which was increased to \$65,450,321, in 1897. This increase is \$7,296,641, or 12.55 per cent., while the increase in the total capital invested, that is to say, the capital invested in the 1,245 establishments representing "All Industries," amounted to 7.87 per cent.

It should be borne in mind that the term "capital" used in this report includes all forms of capital used or devoted to production. In other words, it is made up of the value of land and buildings, machinery, fixtures and tools, cash, whether owned or borrowed, cost of raw material on hand, etc. Some of the factors making up the total capital in an industry may be of a kind that may vary in value from year to year, and therefore have a more or less fluctuating effect on the amount of cap-

ital invested; but as a rule, an increase in capital generally means an increase in the amount of product of the establishment.

STOCK USED.

On page 562 of this report will be found the statistical table where a comparison is made between the two years of the stock or material used.

The term "stock used" here is understood to mean for every establishment, all kinds of materials and supplies that is necessary to the complete production of the goods.

In the 1,245 establishments making returns, \$87,027,266 of stock was consumed in 1896 as against \$98,130,070 in 1897, an increase in the latter year of \$11,102,804, or 12.76 per cent.

With the exception of the following industries, which show a decrease:—"Agricultural implements; artisans' tools and hardware specialties; brick, tile and sewer pipe; brooms, brushes, etc.; cement, lime, etc.; cooperage; furniture; furs, gloves, etc.; malt; office and saloon fixtures; ship-building and woodenware," twelve in number,—all the other industries show an increase in the consumption of raw material, ranging from 2.24 per cent. in cut stone, to 59.92 per cent. in soap, lye and potash.

The decrease in the above mentioned industries varies from 1.27 per cent. in brooms, brushes, etc., to 41.13 per cent. in ship-building.

The seemingly low value of the stock used in the manufacture of lager beer is perhaps explained by the fact that in the returns made for said industry, no allowance has been made for the expense of United States and other revenue. This fact should be taken into account when the subject of stock used in said industry is considered.

We again compare the same seven industries in the following table:

INDUSTRIES.	No. of establishments considered.	VALUE OF STOCK USED.		INCREASE (+) OR DECREASE (-) IN 1897.	
		1896.	1897.	Amount.	Pet.
Flour and feed	86	\$15,889,410	\$18,724,577 +	\$2,835,167	17.84
Lager beer	71	3,270,795	3,702,671 +	431,876	13.20
Leather	33	9,789,314	11,320,816 +	1,531,502	15.64
Lumber, lath and shingles..	168	9,861,062	12,187,522 +	2,326,460	23.59
Machines and machinery....	86	7,662,023	8,155,581 +	493,558 +	6.44
Paper and pulp	34	3,392,882	3,481,577 +	88,695	2.61
Sash, doors, blinds, etc.....	73	2,680,742	2,879,007 +	198,265	7.39
Other industries	694	39,083,692	42,500,886 +	3,417,194	8.74
All industries	1,245	\$87,027,266	\$98,130,070 +	\$11,102,804	12.76

The value of stock used in the above industries in 1896 was \$47,943,574, and in 1897 it was \$55,629,184, which is 55.09 per cent. of the total value of stock used in 1896, and 56.69 per cent. of the total stock used in 1897. Each of the seven industries shows a heavy increase, varying from 2.61 per cent. in paper and pulp, which is by far the smallest, to 23.59 per cent. in lumber, lath and shingles.

The seven industries combined show an increase in 1897 over 1896 of \$7,685,610, or 16.03 per cent. The increase for 1897 in "other industries" was 8.74 per cent. and for "all industries," as have already been noted, it was 12.76 per cent.

GOODS MADE.

The statistical table relating to goods made and work done in the classified industries in the state will be found on page 563.

A detailed comparison is there made between the years 1896 and 1897, both as to the value of the goods made, as well as the increase or decrease and its expression in percentages, and all analysis relating to product, or goods made in said years, are based upon the contents in said tables.

The total value of goods made and work done in the 1,245 establishments in 1896 was \$155,152,906, rising in 1897 to \$169,946,673, an increase of \$14,793,767, or 9.53 per cent.

A decrease is noted in twelve industries, namely: Agricultural implements; artisans' tools, etc.; brick, tile, etc.; brooms, brushes, etc.; cement, lime, etc.; cooperage; furniture; furs, gloves, etc.; electrical and gas apparatus; paper and pulp; ship and boat building; and woodenware.

The decrease in some of these industries is quite marked, and the differences in the percentage of decrease, looking at the twelve, is seen to be of wide scope, ranging from 0.28 per cent. in electrical and gas apparatus to 44.57 per cent. in ship and boat building.

In the different industries where the value of goods made and work done is greater in 1897 than in 1896, the increase ranges from 0.15 per cent. in cut stone to 56.71 per cent. in soap, lye and potash.

For the purpose of further comparison, the returns of the seven industries are again brought forward in the following table:

INDUSTRIES.	No. of establishments considered.	VALUE OF GOODS MADE AND WORK DONE.		INCREASE (+) OR DECREASE (-) IN 1897.	
		1896.	1897.	Amount.	Perc't.
Flour and feed.....	86	\$19,186,233	\$22,016,981	+ \$2,830,748	+ 14.75
Lager beer	71	15,394,071	16,945,217	+ 1,551,146	+ 10.07
Leather	33	13,445,346	15,153,361	+ 1,708,015	+ 12.70
Lumber, lath and shingles..	168	18,322,764	22,043,162	+ 3,720,398	+ 20.30
Machines and machinery...	86	7,662,023	8,155,581	+ 493,558	+ 6.44
Paper and pulp.....	34	6,592,166	6,555,806	- 36,360	- 0.55
Sash, doors, blinds.....	73	5,002,045	5,260,706	+ 258,661	+ 5.17
Other industries	694	69,548,258	73,815,859	+ 4,267,601	+ 6.14
All industries	1,245	\$155,152,906	\$169,946,673	+ \$14,793,767	+ 9.53

The total value of goods made and work done by these seven industries in 1896 was \$85,604,648, increasing in 1897 to \$96,130,814. This is an increase over 1896 of \$10,526,166, or 12.30 per cent.

The value of their combined product is 55.17 per cent. of the total value of goods made and work done in all industries in 1896, and 56.57 per cent. in 1897.

They all show heavy increases in their product, with the exception of the paper and pulp industry, which shows the very slight decrease of 0.55 per cent.

The output in the lumber industry exhibits the greatest increase, being in value \$3,720,398 more in 1897 than in 1896, or 20.30 per cent. The next greatest is flour and feed, showing an increase of \$2,830,748, or 14.75 per cent.

The value of the leather product exceeded that of 1896 by

\$1,708,015, or 12.70 per cent; lager beer by \$1,551,146, or 10.07 per cent. Machines and machinery increased its value of goods made in 1897 by \$493,558, or 6.44 per cent., and sash, doors and blinds show an increase for 1897 of \$258,661 in its product, or 5.17 per cent.

In the other industries the amount of gain in 1897, as compared with 1896, was \$4,267,601, or 6.14 per cent., and in all industries the increase, as before stated, was 9.53 per cent.

We present in the following analysis table a further comparison between the years 1896 and 1897 on the same subject of goods made, dividing the establishments into classes according to the value of goods made by them.

CLASSIFIED VALUE OF GOODS MADE.	CLASS.	NUMBER OF ESTABLISHMENTS.		AGGREGATE VALUE OF GOODS MADE IN SAID ESTABLISHMENTS.		INCREASE (+) OR DECREASE (-) IN 1897.		
		1896.	1897.	1896.	1897.	No. of estab-lishm'ts.	Amount.	Percent-ages.
Establishments producing under \$5,000	1	83	81	\$270,647	\$254,637	- 2	\$16,010	- 5.91
\$5,000 but under \$10,000	2	151	155	1,064,435	1,122,949	+ 4	58,514	+ 5.49
10,000 but under 25,000	3	289	262	4,577,505	4,178,673	-27	398,832	- 8.71
25,000 but under 50,000	4	207	226	7,121,336	7,805,272	+19	683,936	+ 9.60
50,000 but under 75,000	5	113	102	6,735,690	5,742,087	-11	993,603	-14.75
75,000 but under 100,000	6	73	70	6,165,977	5,999,755	- 3	166,222	- 2.69
100,000 but under 150,000	7	91	78	10,929,403	9,512,365	-13	1,417,038	-12.96
150,000 but under 200,000	8	62	66	10,448,779	11,073,398	+ 4	624,519	+ 5.98
200,000 but under 300,000	9	73	72	17,886,455	17,127,864	- 1	758,591	- 4.24
300,000 but under 400,000	10	31	45	10,613,198	15,246,113	+14	4,632,915	+43.65
400,000 but under 500,000	11	14	27	6,009,535	11,705,931	+13	5,696,396	+94.79
500,000 but under 1,000,000	12	32	33	21,208,016	21,677,498	+ 1	469,482	+ 2.21
1,000,000 but under 2,000,000	13	18	18	22,756,275	23,562,528	+ 1	806,253	+ 3.54
2,000,000 and over	14	8	10	29,365,655	34,937,603	+ 2	5,571,948	+18.97
Totals		1,245	1,245	\$155,152,906	\$169,946,673		+\$14,793,767	+ 9.53

The above table really explains itself, but we append a few analytical remarks.

It will be seen that the establishments are divided into fourteen classes, the lowest, or class one, including those that have turned out goods to the value of \$5,000 or less, and the highest, or class fourteen, those having a product of \$2,000,000 and over.

It is seen that many establishments changed, that is, either increased or decreased their product. The change seems to be largely from a smaller to a greater output.

Thus in class one there are two establishments less in 1897 than in 1896; in class three there are 27; in class five we find 11 less; class six shows three less, and class seven has 13 less than 1896. The increase of 19 in class four indicates that most of the establishments in class three increased their amount of finished product, so as to take their place in class four.

The greatest increase, however, we find in classes ten and eleven, where the number of establishments for the first mentioned show an increase of 14, and for the last mentioned 13. The increase in the amount of goods made in the establishments of class ten for the year 1897 was \$4,632,915, or 43.65 per cent., and in class eleven for the same year the increase was \$5,696,396, or 94.79 per cent.

In class fourteen two more establishments are noted for 1897 than was shown for 1896, and the increase in the amount of goods made was \$5,571,948, or 18.97 per cent.

The combined output for all classes was, as has been already stated elsewhere, \$155,152,906 for 1896, and \$169,946,673 in 1897, showing an increase of \$14,793,767, or 9.53 per cent.

PERSONS EMPLOYED.

The analysis tables relating to persons employed, wages, proportion of business done and days in operation are based upon the returns of 1,499 establishments, or 254 more establishments than were treated in the consideration of capital invested, stock used and goods made. The principal reason for this is that some of the industries added are not strictly engaged in manufacturing, but engage labor on a large scale.

Other industries engaged in manufacture, though of less

importance, failed to return complete answers to all queries, mostly attributable to inadequate bookkeeping, but all returned the data pertaining to employment, wages, etc.

To arrive at the amount of employment in the different industries with as much accuracy as possible, the statistical inquiry and result is shown in three parts, the average number, the smallest number and the greatest number of persons employed. The difference between the two last named indicates the range of unemployment. The statistical tables in detail are found on pages 565 to 588.

The average number of persons employed in the 1,499 establishments was 80,051 in 1896, and 87,534 in 1897, an increase of 7,483 in the latter year.

The analytical table below shows the average number of persons employed in the seven industries treated before.

INDUSTRIES.	No. of establishments considered.	AVERAGE NUMBER OF PERSONS EMPLOYED DURING THE YEAR.		INCREASE (+) OR DECREASE (-) IN 1897.	
		1896.	1897.	Number.	Per cent.
Flour and feed.....	86	1,095	1,132	+ 37	+ 3.33
Lager beer	71	3,133	3,108	- 25	- 0.79
Leather	33	4,340	4,754	+ 414	+ 9.54
Lumber, lath and shingles.....	168	11,542	11,827	+ 285	+ 2.47
Machines and machinery.....	86	4,317	4,486	+ 169	+ 3.91
Paper and pulp.....	34	3,117	3,152	+ 35	+ 1.12
Sash, doors, blinds, etc.....	73	3,207	3,507	+ 300	+ 9.35
Other industries	948	49,300	55,568	+ 6,268	+ 12.71
All industries	1,499	80,051	87,534	+ 7,483	+ 9.35

As will be seen, all the industries mentioned in the above table show an increase in 1897 in the average number of persons employed, with the exception of lager beer, showing a small numerical decrease of 25, or 0.79 per cent. The greatest increase is noted for leather, both in number and percentage, being a gain of 414, or 9.54 per cent. Sash, doors and blinds have the next greatest increase, being 300, or 9.35 per cent. In lumber, lath and shingles the increase was 285, or 2.47 per cent. Machines and machinery show a gain of 169, or 3.91 per cent., while in all the other industries, outside of those mentioned in the foregoing table, show an increase of 6,268 in the average number employed, or 12.71 per cent.

The percentage of increase for all industries is 9.35.

In the next table we present the same industries with the number of persons employed at periods of employment of the smallest number.

INDUSTRIES.	No. of establishments considered.	SMALLEST NUMBER OF PERSONS EMPLOYED.		INCREASE (+) OR DECREASE (-) IN 1897.	
		1896.	1897.	Number.	Per cent.
Flour and feed.....	86	1,025	1,108	+ 83	+ 8.10
Lager beer	71	3,032	2,984	- 48	- 1.58
Leather	33	4,075	4,201	+ 126	+ 3.11
Lumber, lath and shingles.....	168	6,313	5,195	- 1,118	- 17.71
Machines and machinery.....	86	3,792	4,201	+ 409	+ 10.78
Paper and pulp.....	34	2,774	2,893	+ 119	+ 4.29
Sash, doors, blinds, etc.....	73	2,716	2,788	+ 72	+ 2.65
Other industries	948	41,842	47,837	+ 5,995	+ 14.33
All industries	1,499	65,569	71,207	+ 5,638	+ 8.60

In saying the "smallest number of persons employed," it is meant the month when the establishments reported the smallest number of persons employed.

We again refer to the tables on pages 564-571, where the smallest and greatest number employed in the different industries are exhibited. By scrutinizing these two tables, the fluctuation in the matter of employment can there best be seen, and the range of unemployment determined.

There are, of course, some industries whose business is of such a nature that it gives them a busy and a dull season every year, with a correspondingly greater or lesser number of persons at work, but as a rule the range of non-employment in the different industries is quite clearly defined in the tables referred to.

In the industries indicated in the above table, we find that they all show an increase in 1897, except lager beer and lumber, which show a decrease, the first by a number of 48, or 1.58 per cent., the last mentioned by 1,118, or 17.71 per cent. Machines and machinery show the greatest increase, namely, 409, or 10.78 per cent. Flour and feed show a gain of 8.10 per cent, leather 3.11 per cent, paper and pulp 4.29 per cent., sash, doors, blinds, etc., 2.65 per cent., while the other industries show a numerical increase of 5,995, or 14.33 per cent., and in all industries

together, as indicated on the last line, the increase over 1896 was 5,638, or 8.60 per cent.

The third and similar review on employment relates to the greatest number of persons employed during the same years, and again we present the group of seven industries :

INDUSTRIES.	NO OF ESTAB. CONSIDERED.	GREATEST NUMBER OF PERSONS EMPLOYED.		INCREASE (+) OR DECREASE (-) IN 1897.	
		1896.	1897.	Number.	Pct.
Flour and feed.....	86	1,144	1,205	+ 61	+ 5.33
Lager beer	71	3,244	3,352	+ 108	+ 3.33
Leather	33	4,872	5,329	+ 457	+ 9.38
Lumber, lath and shingles.....	168	17,900	19,706	+ 1,806	+ 10.09
Machines and machinery.....	86	4,921	5,256	+ 335	+ 6.80
Paper and pulp.....	34	3,667	3,716	+ 49	+ 1.34
Sash, doors, blinds	73	3,714	4,015	+ 301	+ 8.10
Other industries.....	948	60,084	67,260	+ 7,176	+ 11.94
All industries	1,499	99,546	109,839	+ 10,293	+ 10.34

A glance at the last table will show that all the industries therein named show an increase in 1897 over 1896, that of lumber, etc., leading with a numerical gain of 1,806, or 10.09 per cent., leather coming next with 457, or 9.38 per cent., and the percentages for the balance ranging from 1.34 in paper and pulp to 8.01 per cent. in sash, doors, blinds, etc. In the other industries 7,176 more persons were employed in 1897 than in 1896, or 11.94 per cent., while all industries note a gain of 10,293 persons, or 10.34 per cent.

In connection with the foregoing tables we copy from pages 566-567, where presentations for comparison are made of the aggregate average number of persons employed in each industry, as well as the smallest and the greatest number. The following table for "all industries" is for the purpose of comparing the variation of employment between the years 1896 and 1897:

Comparative years.	Number of establishments considered.	Aggregates: Smallest number of persons employed.	Aggregates: Greatest number of persons employed.	Excess or range.
1896.....	1,499	65,569	99,546	33,977
1897.....	1,499	71,207	109,839	38,632

The number of persons who were out of employment for a longer or shorter period of time was larger by 4,655 in 1897, or, on the other hand, it can be said that 4,655 more persons were employed a longer or shorter period of time in the different industries in 1897 than in 1896.

However, it is clear that these persons, representing the difference between the smallest and the greatest number employed during the year, were not constantly employed in the industries named, but it does not therefore follow that they were wholly unemployed; it is only fair to infer that they were employed at some other occupation temporarily, or during the time of diminished business in their respective industries.

From pages 570-571, containing the table showing the average number of persons employed in each establishment by industries we bring out the average number of persons per establishment in "all industries" in the following table, and which will explain itself:

Comparative years.	Number of establishments considered.	Average number.	Smallest number.	Greatest number.	Excess greatest over smallest number.
1896	1,499	53	44	66	22
1897	1,499	58	48	73	25

The following table is reproduced from page 588, and shows the aggregate number of persons employed in each month during the two years. Upon pages 574 to 588 is found the employment by month for each industry, which together makes the aggregate number as seen in the table below. The average number of persons employed each month in each of the 1,499 establishments is also shown, being obtained by dividing the number of persons employed each month by the number of establishments.

MONTHS.	AGGREGATE NUMBER OF PERSONS EMPLOYED IN EACH MONTH.		AVERAGE NUMBER OF PERSONS EMPLOYED IN EACH ESTABLISHMENT IN EACH MONTH.	
	1896.	1897.	1896.	1897.
January	75,014	75,546	50	50
February	77,074	77,760	51	52
March	78,234	80,498	52	54
April	84,465	87,483	57	58
May	87,441	92,322	58	62
June	87,911	92,732	59	62
July	86,326	92,330	58	62
August	83,545	92,567	56	62
September	79,353	92,678	53	62
October	77,451	92,973	52	62
November	74,739	88,218	50	59
December	70,800	83,259	47	56

The increase in the number of persons employed, both in the aggregate number as well as the average number by establishments, is quite marked, but the variation in each of the two years in the number employed month by month is noticeably very small. The lowest average for 1896 was 47 and the highest 59, while for 1897 the lowest was 50, and the highest 62. The general average number of persons employed per month in each establishment for the year 1896 was 5,375, and in 1897 it was 5,842, an increase of 467 persons per establishment, or 8.69 per cent. The highest average for 1896 is from April to August, inclusive, while for 1897 the high average runs from April to November, inclusive.

The range of employment and unemployment may be more plainly shown by percentages as below :

MONTHS.	PERCENTAGES OF EMPLOYMENT DURING THE MONTHS SPECIFIED.		PERCENTAGES OF UNEMPLOYED DURING THE MONTHS SPECIFIED.	
	1896.	1897.	1896.	1897.
January	85.33	81.26	14.67	18.74
February	87.67	83.64	12.33	16.36
March	88.99	86.58	11.01	13.42
April	96.08	94.10	3.92	5.90
May	99.47	99.30	0.53	0.70
June	100.00	99.74	.....	0.26
July	98.20	99.31	1.80	0.69
August	95.03	99.56	4.97	0.44
September	90.27	99.68	9.73	0.32
October	88.10	100.00	11.90	.....
November	85.02	94.89	14.98	5.11
December	80.54	89.55	19.46	10.45

The above table is based on all industries.

The month showing the highest number of persons employed is considered as 100 per cent., which, for 1896, was June, and for 1897, October. The percentages for the other months are obtained in their relative proportion thereto, and the difference between the correct percentage of employment and 100 represents the percentage of unemployment for that month.

Thus, for the month of December, 1896, we find the percentage of employment to be 80.54, and the percentage of unemployment correspondingly is 19.46, which, by the way, is the largest percentage of unemployment for said year.

The year 1897 shows a decidedly smaller percentage of unemployment than 1896, which fact has also been shown in other tables. The comparisons in the above table are so obvious as to render unnecessary any further analysis thereof.

The next presentation shows the relative proportion of the sexes employed in the different industries. On pages 574 to 588 will be found tables giving the number of persons employed by sex. We will here give it by percentages:

PERCENTAGES.

INDUSTRIES.	NUMBER OF PERSONS EMPLOYED DURING THE YEAR, BY SEX.			
	1896.		1897.	
	Males.	Females.	Males.	Females.
Agricultural implements	99.95	0.05	99.94	0.06
Artisans' tools and hardware specialties....	100.00	.....	100.00	.....
Beverages (not spirituous—soft drinks).....	92.89	7.11	91.84	8.16
Bicycles, tricycles, etc.....	99.64	0.36	99.96	0.04
Boots and shoes	68.59	31.41	67.85	32.15
Boxes (wooden and paper).....	71.31	28.69	71.56	28.44
Brick, tile and sewer pipe.....	100.00	.....	100.00	.....
Brooms, brushes and baskets.....	97.88	2.12	98.07	1.93
Burial cases, caskets, coffins, etc.....	81.02	18.98	76.40	23.60
Cement, lime, plaster, etc.....	99.46	0.54	99.52	0.48
Chairs	88.90	11.10	91.13	8.87
Chemical preparations	81.03	8.97	83.19	6.81
Cigars, snuff and tobacco.....	73.24	26.76	70.27	29.73
Clothing	20.16	79.84	19.75	80.25
Coal and wood.....	99.72	0.28	100.00	.....
Confectionery, crackers, etc.....	51.04	48.96	46.84	53.16
Food cooking and heating apparatus.....	99.50	0.70	99.43	0.57
Cooperage	100.00	.....	100.00	.....
Cotton and linen goods.....	38.14	61.86	40.43	59.57
Electrical and gas apparatus and supplies...	95.54	4.46	95.72	4.28
Electrical and gas lighting, power and street railways	99.64	0.36	99.74	0.26
Fancy articles	81.69	18.31	83.51	16.49

STATISTICS OF MANUFACTURES.

673

PERCENTAGES—Continued.

DUSTRIES.	NUMBER OF PERSONS EMPLOYED DURING THE YEAR, BY SEX.			
	1896.		1897.	
	Males.	Females	Males.	Females.
Flour and feed.....	99.49	0.51	99.51	0.49
Food preparations	89.07	10.93	82.49	17.51
Furniture	97.72	2.28	98.63	1.37
Furs, gloves and mittens.....	44.83	55.17	39.26	60.74
Grain and warehouse men.....	99.61	0.39	100.00	.....
Iron goods (malleable).....	100.00	.....	99.51	0.49
Iron (pig).....	100.00	.....	100.00	.....
Knit goods	16.22	83.78	18.81	81.19
Lager beer	89.43	10.57	90.29	9.71
Laundries	24.71	75.29	25.32	74.68
Leather	94.74	5.26	94.24	5.76
Lithographing and engraving	91.85	8.15	92.69	7.31
Lumber lath and shingles.....	99.35	0.65	99.46	0.54
Malt	100.00	.....	100.00	.....
Machines and machinery	99.64	0.36	99.60	0.40
Mixed textiles	43.19	56.81	44.31	55.69
Office and saloon fixtures, etc.....	100.00	.....	100.00	.....
Paints, oils and crude chemicals.....	99.16	0.84	99.29	0.71
Paper and pulp	79.97	20.03	80.03	19.97
Printers' supplies	96.78	3.22	96.67	3.33
Railway equipment	99.86	0.14	99.95	0.05
Saddlery, harness, etc.....	84.13	15.87	85.53	14.47
Sash, doors, blinds and mouldings.....	98.85	1.15	98.82	1.18
Sheet metal goods	85.94	14.06	82.34	17.66
Ship and boat building	99.76	0.24	99.75	0.25
Soap, lye, potash, etc.....	71.62	28.38	70.48	29.52
Staves and heading	100.00	.....	100.00	.....
Stone, (marble, granite, etc.).....	100.00	.....	100.00	.....
Straw goods	43.31	56.69	49.96	50.04
Toys and games	89.16	10.84	90.34	9.66
Trunks, valises, etc.....	93.38	6.62	91.29	8.71
Veneer	99.66	0.34	100.00	.....
Wagons, carriages and sleighs.....	97.87	2.13	98.36	1.64
Woodenware	99.69	0.31	99.99	0.01
Woolen and worsted goods.....	40.37	59.63	42.44	57.56
Miscellaneous	56.26	43.74	54.41	45.59
All industries	88.43	11.57	89.03	10.97

A comparison of the percentages in the above table will indicate the average relative proportion of males and females at work in the stated industries for the two years, as well as the changes that have occurred in said proportion in the stated period.

In reviewing the above table we find for both years that in nine industries, or 15.52 per cent. of all the industries, female help largely predominates. Thus, the clothing industry shows an average of about 80 per cent. of all employes to be females; confectionery, crackers, etc., about 51 per cent; cotton and linen goods, about 61 per cent.; furs, gloves, etc., about 58 per cent.;

knit goods, about 82½ per cent.; laundries, about 75 per cent.; mixed textiles, about 56 per cent.; straw goods, about 53 per cent., and woolen and worsted goods, about 59 per cent.

Other industries where the proportions of female employes range from 28 per cent. to 45 per cent., are five in number; boots and shoes, about 32 per cent.; boxes, about 28 per cent.; cigars, etc., about 28 per cent.; soap, lye, etc., about 29 per cent., and miscellaneous, about 45 per cent. Nine industries, where the proportion of female employes are shown to be from 10 to 21 per cent. of the whole number of persons employed, are: Burial cases, etc., chairs, fancy articles, food preparations, lager beer, paper and pulp, saddlery, harness, etc., sheet metal goods, and toys and games. Eleven industries have less than 10, but more than 1 per cent. of females employed.

It will also be seen that in some industries no females are employed. Of such there were nine in 1896 and eleven in 1897. In thirty-one industries the relative proportion of the sexes practically remained unchanged in the two years, the difference ranging from 0.01 per cent. to 0.91 per cent.; in other words, the change in no case reached 1 per cent.

In this slight variation of the thirty-one industries mentioned, nine showed an increase and twenty-two a decrease. Nine industries show an increased number of female help in 1897. over 1896, ranging from 6.58 per cent. in food preparations, to 1.05 per cent. in beverages (not spiritous). The increases in other industries being, burial cases, caskets, etc., 4.62 per cent.; cigars and tobacco, 2.97 per cent.; confectionery, etc., 4.20 per cent.; furs, gloves, etc., 5.57 per cent.; sheet metal goods, 3.60 per cent.; trunks, valises, etc., 2.09 per cent., and miscellaneous, 1.85 per cent.

Decreases in the same period are shown in 10 industries, varying from 6.65 per cent. in straw goods, down to 1.14 per cent. in soap, lye, etc. The balance are chemical preparation, showing 2.16 per cent.; chairs, 2.23 per cent.; cotton and linen goods, 2.29 per cent.; fancy articles, 1.82 per cent.; knit goods, 2.59 per cent.; saddlery, etc., 1.40 per cent.; toys and games, 1.18 per cent., and woolen and worsted goods, 2.07 per cent.

WAGES PAID.

The tables appertaining to wages will be found on pages 589 and 622, and include total wages paid by industries, average yearly earnings and classified weekly wages.

It is well to remember that wage-earners only are considered in the wage tables; amounts paid to clerks, bookkeepers, etc., are not included.

In the following table we reproduce the amount of wages paid in the seven industries presented heretofore, as well as the total amount of wages paid in all industries.

INDUSTRIES.	No. of establishments considered.	TOTAL AMOUNT PAID IN WAGES DURING THE YEAR.		INCREASE (+) OR DECREASE (-) IN 1897.	
		1896.	1897.	1896.	1897.
Flour and feed	86	\$547,830	\$586,731	+ \$38,901	+ 6.73
Lager beer	71	1,649,640	1,686,468	+ 36,828	+ 2.23
Leather	33	1,790,571	2,028,342	+ 237,771	+ 13.28
Lumber, lath and shingles	168	3,904,245	4,566,264	+ 662,019	+ 16.95
Machines and machinery	86	2,135,742	2,343,671	+ 147,929	+ 6.73
Paper and pulp	34	1,243,243	1,240,476	- 2,767	- 0.22
Sash, doors, blinds, etc.....	73	1,086,510	1,159,449	+ 72,939	+ 6.71
Other industries	948	19,332,041	22,971,643	+3,639,602	+ 18.83
All industries	1,499	31,749,822	36,583,044	4,833,222	+ 15.22

The total amount paid in wages in "all industries" for the year 1896 was \$31,749,822, and for 1897 it was \$36,583,044, a gain of \$4,833,222, or 15.22 per cent. All of the industries referred to in the above table show an increase in the amount of wages paid, with the exception of paper and pulp, which shows the slight decrease of 0.22 per cent. The greatest gain was in lumber, both in amount and percentage, being \$662,019, or 16.95 per cent. Leather comes next, with an increase of \$237,711, or 13.28 per cent. Flour and feed, and machines and machinery each show a percentage of increase of 6.73, while sash, doors, etc., was nearly the same, or 6.71 per cent., and lager beer shows an increase of 2.23 per cent.

In the industries, other than the seven enumerated, the increase was \$3,639,602, or 18.83 per cent.

AVERAGE YEARLY EARNINGS.

The average yearly earnings in the same seven industries, with the average for all industries, are brought forward in the next table:

INDUSTRIES.	No. of establishments considered.	AVERAGE YEARLY EARNINGS.		INCREASE (+) OR DECREASE (-) IN 1897.	
		1896.	1897.	1896.	1897.
Flour and feed	86	\$500.30	\$518.31	+ \$18.01	+ 3.59
Lager beer	71	526.54	542.62	+ 16.08	+ 3.05
Leather	33	412.57	426.66	+ 14.09	+ 3.41
Lumber, lath and shingles.....	168	338.26	386.09	+ 47.83	+ 14.14
Machines and machinery	86	508.63	522.44	+ 13.81	+ 2.71
Paper and pulp.....	34	398.85	393.71	- 5.14	- 1.30
Sash, doors, blinds, etc.....	73	338.79	330.61	- 8.18	- 2.41
Other industries	948	392.13	413.40	+ 21.27	+ 5.42
All industries	1,499	\$386.63	\$416.79	+ \$30.16	+ 7.80

Average yearly earnings are obtained by dividing the total amount of wages paid in each industry by the aggregate average number of persons employed therein, without discrimination as to sex or age. Where returns similar to those from which these tables are derived are received each year, the averages, like the above, are useful in comparison, and from that standpoint show the relative condition in each year.

The average yearly earnings in "all industries," as shown by the final line in the above table, was \$386.63 in 1896, and \$416.79 in 1897, a gain of \$30.16, of 7.80 per cent.

Among the seven industries considered, paper and pulp, and sash, doors, etc., show a slight decrease, being 1.30 per cent. for the first and 2.41 per cent. for the last mentioned.

The lumber industry shows the greatest increase in the yearly earnings per employe, being 14.14 per cent. In flour and feed the gain was 3.59 per cent.; lager beer, 3.05 per cent.; leather, 3.41 per cent.; machines and machinery, 2.71 per cent., and in the other industries the increase in the aggregate was 5.42 per cent.

It should be borne in mind that these average yearly earnings do not altogether indicate the *rate* of wages, as many contingencies may affect these averages. They should be closely com-

pared with the data respecting the number of persons employed, the length of time in operation, the employment of a larger number of females and minors in one year, as compared with another, for all these different elements have an important bearing upon the average yearly earnings. They should, therefore, be carefully considered before any deductions are drawn from them.

When the industries are compared with one another, wide differences appear in the average amount of yearly earnings.

In industries showing the highest averages it is usually found that male adults are largely employed, and in other cases the difference may be ascribed to the relative degree of skill required in the different industries.

On the other hand, where the lower averages of yearly earnings are found it is generally in industries where the manufacture permits the employment of a large proportion of females and young persons.

To more fully demonstrate the points above referred to, the following table is brought out.

The average yearly earnings in each industry for the years 1896 and 1897, together with the proportions of males and females employed therein during the same period, are presented. With the facts above referred to and an examination of the table itself, a further review of it is unnecessary.

INDUSTRIES.	AVERAGE YEARLY EARNINGS.		PERCENTAGE OF NUMBER OF PERSONS EMPLOYED DURING THE YEAR BY SEX.		AVERAGE YEARLY EARNINGS.		PERCENTAGE OF NUMBER OF PERSONS EMPLOYED DURING THE YEAR BY SEX.	
			1896.				1897.	
	1896.		Males.	Fe-males.	1897.		Males.	Fe-males.
Agricultural implements	\$538.70		99.95	0.05	\$503.18		99.94	0.06
Artisans' tools and hardware specialties	474.38		100.00	.....	412.20		100.00	.....
Beverages (not spirituous, soft drinks)	444.43		92.89	7.11	456.23		91.84	8.16
Bicycles, tricycles, etc.....	453.19		99.64	0.36	494.97		99.96	0.04
Boots and shoes	278.07		68.59	31.41	298.81		67.85	32.15
Boxes (wooden and paper).....	281.32		71.31	28.69	302.97		71.56	28.44
Brick, tile and sewer pipe.....	284.27		100.00	.....	284.38		100.00	.....
Brooms, brushes, and baskets.....	290.45		97.88	2.12	301.87		98.07	1.93
Burial cases, caskets, coffins, etc....	328.46		81.02	18.98	350.25		76.40	23.60
Cement, lime, plaster, etc.....	500.04		99.46	0.54	448.75		99.52	0.48

INDUSTRIES.	AVERAGE YEARLY EARNINGS.		PERCENTAGE OF NUMBER OF PERSONS EMPLOYED DURING THE YEAR, BY SEX.		AVERAGE YEARLY EARNINGS.		PERCENTAGE OF NUMBER OF PERSONS EMPLOYED DURING THE YEAR, BY SEX.	
			1896.				1897.	
			1896.	Males.	Fe- males.	1897.	Males.	Fe- males.
Chairs	278.27	88.90	11.10	288.70	91.13	8.87		
Chemical preparations	621.15	81.03	18.97	686.38	83.19	16.81		
Cigars, snuff and tobacco	459.22	73.24	26.76	462.05	70.27	29.73		
Clothing	290.16	20.16	79.84	328.54	19.75	80.25		
Coal and wood	453.35	99.72	0.28	499.95	100.00			
Confectionery, crackers, etc.	334.00	51.04	48.96	358.16	46.84	53.16		
Cooking and heating apparatus	360.36	99.30	0.70	367.82	99.43	0.57		
Cooperage	344.63	100.00		339.84	100.00			
Cotton and linen goods	202.44	38.14	61.86	244.71	40.43	59.57		
Electrical and gas apparatus and supplies	467.13	95.54	4.46	475.75	95.72	4.28		
Electrical and gas lighting power and street railway	587.87	99.64	0.36	631.75	99.74	0.26		
Fancy articles	302.97	81.69	18.31	324.80	83.51	16.49		
Flour and feed	500.30	99.49	0.51	518.31	99.51	0.49		
Food preparations	430.23	89.07	10.93	424.40	82.49	17.51		
Furniture	293.35	97.72	2.28	298.14	98.63	1.37		
Furs, gloves and mittens	341.04	44.83	55.17	320.54	39.26	60.74		
Grain and warehouse men	603.25	99.61	0.39	584.58	100.00			
Iron goods (malleable)	447.69	100.00		453.36	99.51	0.49		
Iron (pig)	381.48	100.00		366.72	100.00			
Knit goods	202.00	16.22	83.78	228.11	18.81	81.19		
Lager beer	526.54	89.43	10.57	542.62	90.29	9.71		
Laundries	288.00	24.71	75.29	296.01	25.32	74.68		
Leather	412.57	94.74	5.26	426.66	94.24	5.76		
Lithographing and engraving	473.00	91.85	8.15	504.90	92.69	7.31		
Lumber, lath and shingles	338.26	99.35	0.65	336.09	99.46	0.54		
Malt	568.25	100.00		576.71	100.00			
Machines and machinery	508.631	99.64	0.36	522.44	99.60	0.40		
Mixed textiles	219.70	43.19	56.81	221.85	44.31	55.69		
Office and saloon fixtures, etc.	409.77	100.00		410.41	100.00			
Paints, oils and crude chemicals	518.00	99.16	0.84	576.46	99.29	0.71		
Paper and pulp	398.85	79.97	20.03	393.71	80.03	19.97		
Printers' supplies	373.83	96.78	3.22	377.64	96.67	3.33		
Railway equipment	562.68	99.86	0.14	564.11	99.95	0.05		
Saddlery, harness, etc.	344.24	84.13	15.87	382.03	85.53	14.47		
Sash, doors, blinds and mouldings ..	338.79	98.85	1.15	330.61	98.82	1.18		
Sheet metal goods	360.11	85.94	14.06	304.15	82.34	17.66		
Ship and boat building	528.85	99.76	0.24	422.19	99.75	0.25		
Soap, lye, potash, etc.	377.34	71.62	28.38	434.54	70.48	29.52		
Staves and heading	267.67	100.00		301.06	100.00			
Stone, (marble, granite, etc.)	461.17	100.00		460.19	100.00			
Straw goods	348.09	43.31	56.69	345.72	49.96	50.04		
Toys and games	259.95	89.16	10.84	271.44	90.34	9.66		
Trunks, valises, etc.	308.96	93.38	6.62	321.15	91.29	8.71		
Veneer	296.22	99.66	0.34	310.42	100.00			
Wagons, carriages and sleighs	353.50	97.87	2.13	401.37	98.36	1.64		
Wodenware	318.51	99.69	0.31	318.17	99.99	0.01		
Woolen and worsted goods	265.98	40.37	59.63	295.97	42.44	57.56		
Miscellaneous	330.40	56.26	43.74	350.55	54.41	45.59		
All industries	\$386.63	88.43	11.57	\$416.79	89.03	10.97		

In connection with the table above, we present a classification of the different industries according to the yearly amount of wages earned per employe. They are formed into groups accord-

ing to their class, that is, the yearly amount they enable their employes to earn, showing the number and per cent. of all, together with the numerical increase or decrease in 1897.

The table is self explanatory and we present it without further comment :

INDUSTRIES.	NUMBER OF INDUSTRIES.		PER CENT. OF INDUSTRIES.		Amount of earnings per year per employe.	Numerical increase (+) or decrease (-) in industry, '97.
	1896	*1897.	1896.	1897.		
1896—Chemical prep'ns, grain and warehousemen.						
1897—Chemical prep'ns, elect. and gas lighting and st. ry's	2	2	3.45	3.45	\$600 and over.....	* =
1896—Agr. impl't, elect. lighting and st. ry's, cement, etc., flour, lager beer, malt, machines and machinery, paints, etc., r'y equipment, ship building.						
1897—Agr. impl't, flour, lager beer, malt, machines and machinery, paint, etc., ry. equip'mt, grain and warehousemen, lithographing and engraving.....	10	9	17.24	15.52	\$500 and over.....	- 1
1896—Artisans' tools, etc., bicycles, etc., cigars, etc., coal and wood, elect'cl supplies, lithographing and stone.						
1897—Bicycles, etc, cigars, etc., coal and wood, elect'cl supplies, stone, soft beverages, iron (mal.).....	7	7	12.07	12.07	\$450 but less than \$500..	=
1896—Soft beverages, food preparations, iron (malleable), leather, office and saloon fixtures.						
1897—Food prep'ns, leather, office and saloon fixtures, artisans' tools, etc., cement, etc., ship building, soap, etc., wagons, etc.....	5	8	8.62	13.79	\$400 but less than \$450..	+ 3
1896—Cooking and heating apparatus, iron (pig), paper, etc., printers' suppl's, sheet metal goods, soap, lye, etc., wagons, etc						
1897—Cooking and heating apparatus, iron (pig), paper, etc., printers' supplies, burial cases, etc., confectionery, lumber, etc., saddlery, etc., miscellaneous...	7	9	12.07	15.52	\$350 but less than 400..	+ 2
1896—Burial cases, etc., confectionery, cooperage, fancy articles, furs, etc., lumber, etc., saddlery, etc., sash, doors, etc., straw goods, trunks, etc., woodenware, miscellaneous.						
1897—Cooper'ge, fancy articles, furs, etc., sash, doors, etc., straw goods, trunks, etc., woodenware, boxes, brooms, clothing, sheet metal goods, stoves, etc., veneer.....	12	13	20.69	22.41	\$300 but less than \$350..	+ 1

INDUSTRIES.	NUMBER OF INDUSTRIES.		PER CENT. OF INDUSTRIES.		Amount of earnings per year per employe.		Numerical increase (+) or decrease (-) in indust., '97.
	1896.	1897.	1896.	1897.			
1896—Boots, etc., boxes, brick, etc., brooms, etc., chairs, clothing, furniture, laundries, staves and heading, toys and games, veneer, woolen and worsted goods.							
1897—Boots, etc., brick, etc., chairs, furniture, laundries, toys and games, woolen and worsted goods.	12	7	20.69	12.07	\$250 but less	\$300..	- 5
1896—Cotton and L. goods, knit goods, mixed textiles.							
1897—Cotton and L. goods, knit goods, mixed textiles.....	3	3	5.17	5.17	Less than \$250.....		=
All industries.....	58	58	100.00	100.00			

* (—) No change.

The tables containing the classified weekly wages for each industry, and the number of persons, classified as to sex and age, receiving same for the years of 1896 and 1897 are found on pages 593-622.

The following table shows the classified wage presentation for "all industries," but instead of numbers we make use of percentages:

CLASSIFICATION OF WEEKLY WAGES.	PERCENTAGES OF WAGES PAID, BY SEX.							
	1896.				1897.			
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.
\$25.00 per week and over.....	100.00	.....	.....	.....	100.00	.....	.....	.....
20.00 but under \$25.00.....	100.00	.....	.....	.....	100.00	.....	.....	.....
18.00 but under 20.00.....	100.00	.....	.....	.....	100.00	.....	.....	.....
15.00 but under 18.00.....	100.00	.....	.....	.....	100.00	.....	.....	.....
13.00 but under 15.00.....	100.00	.....	.....	.....	100.00	.....	.....	.....
12.00 but under 13.00.....	99.98	0.02	.....	.....	100.00	.....	.....	.....
11.00 but under 12.00.....	98.74	1.26	.....	.....	97.62	2.38	.....	.....
10.00 but under 11.00.....	98.92	1.08	.....	.....	98.80	1.20	.....	.....
9.00 but under 10.00.....	99.16	0.84	.....	.....	99.18	0.82	.....	.....
8.00 but under 9.00.....	98.64	1.86	.....	.....	98.08	1.92	.....	.....
7.00 but under 8.00.....	97.54	2.01	0.45	.....	96.67	2.02	0.88	0.43
6.00 but under 7.00.....	89.52	8.01	2.23	0.24	88.14	8.25	3.27	0.34
5.50 but under 6.00.....	61.49	27.12	9.48	1.91	71.22	18.15	10.11	1.00
5.00 but under 5.50.....	39.08	47.95	10.64	2.33	51.98	34.31	12.71	3.87
4.50 but under 5.00.....	32.84	37.73	25.24	4.19	26.74	34.66	34.73	3.87
4.00 but under 4.50.....	25.38	36.45	31.39	6.78	15.23	36.57	39.32	8.88
3.50 but under 4.00.....	16.10	37.54	29.72	16.64	9.47	16.29	56.65	17.59
3.00 but under 3.50.....	22.75	25.66	36.06	15.53	3.58	21.76	54.24	20.42
2.50 but under 3.00.....	7.88	16.33	44.24	31.55	.....	13.15	55.44	31.41
2.00 but under 2.50.....	7.89	14.81	42.05	35.25	.....	15.70	52.81	31.49
1.50 but under 2.00.....	5.56	15.74	31.48	47.22	.....	15.12	27.17	57.71
Under \$1.50.....	.....	2.22	13.34	84.44	.....	10.46	3.49	86.05
Totals.....	83.31	8.27	5.89	2.53	80.81	7.11	8.99	3.09

From the percentages in the above table it is seen that females did not share in weekly wages above \$12 in 1896, nor above that of \$11 in 1897. Employes under 18 years of age did not exceed the classification of \$7, but under \$8 per week, in any of the two years.

The percentage of males over 18 years of age received the greater proportion of wages in each class over that of \$5.50, but under \$6 per week in 1896, and that of \$5, but under \$5.50, per week in 1897. A greater number of females over 18 years of age received wages at the rate of \$5, but under \$5.50, per week in 1896 than in any other single rate, being 47.95 per cent. of all who received the same pay, males over 18 years of age being credited with 39.08 per cent., males under 18 years with 10.64 per cent., and females under 18 years with 2.33 per cent.

The greatest percentage reached for females over 18 years of age in 1897 was in the class of \$4.50, but under \$5 per week, it being 34.66 per cent. In the same class males over 18 years received 26.74 per cent.; males under 18 years received 34.73 per cent., and females under 18 years 3.87 per cent.

The largest percentages in the lower wage classes are, of course, found against persons under 18 years of age.

To show the fluctuations in the different wage classes, we present the following analysis table. All industries are included. In this table the total number of wage-earners in each classification, that is, males over 18 years, females over 18, males under 18 and females under 18, is considered severally as representing 100 per cent., and the number of employes in each wage class constitute parts of this total, that is, they are represented by percentages which make a total of 100.

CLASSIFICATION OF WEEKLY WAGES.	PERCENTAGES OF WAGES PAID, BY SEX.							
	1896.				1897.			
	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.	Males 18 years and over.	Females 18 years and over.	Males under 18 years.	Females under 18 years.
(All industries.)	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
\$25.00 per week and over	1.27	.....	.....	.....	1.08	.....	.....	.....
20.00 but under \$25.00	1.88	.....	.....	.....	2.08	.....	.....	.....
18.00 but under 20.00	1.83	.....	.....	.....	2.03	.....	.....	.....
15.00 but under 18.00	4.89	.....	.....	.....	4.78	.....	.....	.....
13.00 but under 15.00	4.81	.....	.....	.....	5.23	.....	.....	.....
12.00 but under 13.00	7.13	0.01	.....	.....	8.88	.....	.....	.....
11.00 but under 12.00	3.46	0.44	.....	.....	3.98	1.10	.....	.....
10.00 but under 11.00	7.29	0.80	.....	.....	7.58	1.04	.....	.....
9.00 but under 10.00	21.21	1.80	.....	.....	17.82	1.66	.....	.....
8.00 but under 9.00	11.55	1.59	.....	.....	12.79	2.86	.....	.....
7.00 but under 8.00	17.18	3.56	1.12	.....	18.15	4.33	1.49	1.98
6.00 but under 7.00	10.46	9.42	3.68	0.93	9.77	10.42	3.27	0.97
5.50 but under 6.00	1.66	7.38	3.62	1.69	1.88	5.44	2.39	0.36
5.00 but under 5.50	1.45	18.03	5.62	2.87	1.54	11.58	3.38	0.78
4.50 but under 5.00	1.39	16.12	15.14	5.85	1.48	20.73	16.43	5.32
4.00 but under 4.50	0.74	10.69	12.94	6.50	0.59	16.15	13.71	9.02
3.50 but under 4.00	0.58	13.73	15.27	19.91	0.27	5.68	15.53	14.05
3.00 but under 3.50	0.95	10.82	21.33	21.41	0.17	11.61	22.85	25.04
2.50 but under 3.00	0.17	3.48	13.25	32.02	.....	3.69	12.31	20.32
2.00 but under 2.50	0.09	1.70	6.75	13.17	.....	2.83	7.53	13.03
1.50 but under 2.00	0.01	0.42	1.18	4.12	.....	0.76	1.08	6.68
Under \$1.50 .....	.....	0.01	0.10	1.53	.....	0.12	0.03	2.40

It will be seen that the greatest percentage of males over 18 years of age received \$9 but under \$10 per week in 1896, being represented by 21.21 per cent., while the percentage of that wage class was 0.33 per cent. below that of \$7 but under \$8 per week in 1897, which class for that year shows the highest percentage.

For females over 18 years of age, \$5 but under \$5.50 per week appears to represent the highest percentage for 1896, being 18.03 per cent.; but in 1897 a greater number received a weekly wage of \$4.50 but under \$5 per week, being represented by 20.73 per cent.

For males under 18 years of age \$3 but under \$3.50 per week seems to have been most commonly paid during both years, a greater number receiving that than any other wage class. The percentage for 1896 being 21.33 per cent., increasing in 1897 to 22.85 per cent.

The greatest percentage for females under 18 years of age in any wage class for 1896 was 22.02, for \$2.50 but under \$3 per week; but for 1897 the greatest percentage is changed for \$3 but under \$3.50 per week, being 25.04 per cent.

The next and final table in relation to wages is a classification of weekly wages for 1896 and 1897, embracing all industries, the number of persons receiving wages in each specified class and the percentage each class bears to the total number of persons employed in all industries, as follows:

Classification of Weekly Wages.	1896.		1897.	
	No.	Per cent	No.	Per cent.
\$25.00 and over—Male over 18 years.....	1,030	1.05	861	0.86
20.00 but under \$25.00—Male over 18 years.....	1,533	1.56	1,674	1.63
18.00 but under 20.00—Male over 18 years.....	1,496	1.53	1,632	1.63
15.00 but under 18.00—Male over 18 years.....	3,990	4.08	3,860	3.87
13.00 but under 15.00—Male over 18 years.....	3,924	4.09	4,194	4.20
\$12.00 but under \$13.00—				
Male over 18 years.....	5,819	5.94	7,156	7.17
Female over 18 years.....	1			
\$11.00 but under \$12.00—				
Male over 18 years.....	2,823	2.89	3,193	3.20
Female over 18 years.....	36	0.03	78	0.08
\$10.00 but under \$11.00—				
Male over 18 years.....	5,948	6.07	6,117	6.13
Female over 18 years.....	65	0.07	74	0.07
\$9.00 but under \$10.00—				
Male over 18 years.....	17,292	17.67	14,357	14.39
Female over 18 years.....	146	0.15	118	0.12
\$8.00 but under \$9.00—				
Male over 18 years.....	9,380	9.58	10,321	10.35
Female over 18 years.....	129	0.13	202	0.20
\$7.00 but under \$8.00—				
Male over 18 years.....	14,007	14.31	14,633	14.68
Female over 18 years.....	288	0.29	307	0.31
Male under 18 years.....	65	0.07	133	0.13
Female under 18 years.....			61	0.06
\$6.00 but under \$7.00—				
Male over 18 years.....	8,526	8.71	7,878	7.89
Female over 18 years.....	763	0.78	738	0.75
Male under 18 years.....	212	0.22	293	0.29
Female under 18 years.....	23	0.02	30	0.03
\$5.50 but under \$6.00—				
Male over 18 years.....	1,356	1.37	1,515	1.53
Female over 18 years.....	598	0.61	386	0.38
Male under 18 years.....	209	0.21	215	0.21
Female under 18 years.....	42	0.04	11	0.01
\$5.00 but under \$5.50—				
Male over 18 years.....	1,190	1.22	1,244	1.25
Female over 18 years.....	1,460	1.49	821	0.83
Male under 18 years.....	324	0.33	304	0.31
Female under 18 years.....	71	0.07	24	0.03
\$4.50 but under \$5.00—				
Male over 18 years.....	1,136	1.16	1,135	1.14
Female over 18 years.....	1,305	1.33	1,471	1.43
Male under 18 years.....	873	0.90	1,474	1.43
Female under 18 years.....	145	0.15	164	0.16
\$4.00 but under \$4.50—				
Male over 18 years.....	603	0.62	477	0.48
Female over 18 years.....	866	0.88	1,145	1.15
Male under 18 years.....	746	0.76	1,231	1.24
Female under 18 years.....	161	0.16	278	0.28

Classification of weekly wages.	1896.		1897.	
	No.	Per cent.	No.	Per cent.
\$3.50 but under \$4.00—				
Male over 18 years.....	477	0.48	233	0.23
Female over 18 years	1,112	1.13	401	0.40
Male under 18 years	880	0.91	1,394	1.39
Female under 18 years	493	0.50	433	0.43
\$3.00 but under \$3.50—				
Male over 18 years	776	0.79	135	0.14
Female over 18 years	875	0.89	823	0.83
Male under 18 years	1,230	1.26	2,051	2.05
Female under 18 years	530	0.54	772	0.77
\$2.50 but under \$3.00—				
Male over 18 years.....	136	0.14	.....	.....
Female over 18 years.....	282	0.28	262	0.26
Male under 18 years.....	764	0.78	1,105	1.11
Female under 18 years	545	0.57	626	0.63
\$2.00 but under \$2.50—				
Male over 18 years	73	0.08	.....	.....
Female over 18 years.....	137	0.14	201	0.20
Male under 18 years.....	389	0.39	676	0.69
Female under 18 years	326	0.33	403	0.40
\$1.50 but under \$2.00—				
Male over 18 years	12	0.01	.....	.....
Female over 18 years	34	0.03	54	0.05
Male under 18 years.....	68	0.06	97	0.09
Female under 18 years.....	102	0.11	206	0.21
Under \$1.50—				
Female over 18 years	1	.....	9	.....
Male under 18 years	6	.....	3	.....
Female under 18 years	38	0.04	74	0.07
Totals	97,867	100.00	99,753	100.00

The above table shows that in 1896 the greatest number of persons employed received a wage of \$9 but under \$10 per week, as has already been stated in a preceding analysis. In 1897, however, the greatest number of persons received a wage of \$7 but under \$8 per week, the number receiving \$9 but under \$10 per week being a close second. The sharp decrease in 1897 in the number of persons receiving \$9 but under \$10 per week is probably to some extent accounted for in the increased number of persons receiving more than \$9 per week in said year.

The above table also reveals that in 1896, 44,103 persons received in weekly wages from \$9 to \$25 and over, and in 1897, 43,314 persons did the same. This is 45.06 per cent. of all persons employed in 1896, and 43.42 per cent in 1897, or, in other words, nearly half of all the persons employed received from \$9 to \$25 and over per week for both years.

In the smaller weekly wages, or from \$5 per week and down, females and the young persons largely predominate.

The analysis given the last two preceding tables is also more or less applicable to the table above.

PROPORTION OF BUSINESS DONE.

The industry presentation relating to the proportion of business done is found in a table on page 623.

In computing the proportion of business done in any industry, the total productive capacity of the establishments comprising such industry, with their present facilities for turning out goods, is made the basis, and this greatest capacity is called 100 per cent. An establishment turning out goods equal to three-quarters of this greatest capacity, the proportion of business done would be called 75 per cent., and if the product reached only one-half of what could be turned out it would be considered 50 per cent.

It will be seen that the average proportion of business done in all industries, comprising 1,499 establishments, was 69.53 per cent. in 1896, and 71.80 per cent. in 1897, an increase of 2.27 per cent.

To further show in a concise way the difference in the average proportion of business done in the different industries, and for a better comparison of the two years under consideration, we present a classification of percentages indicating the proportion of business done, the number of industries in each group or class, and the relative percentages which such group or class bears to the total number of industries, as follows:

CLASSIFICATION.	NUMBER OF INDUSTRIES.		Percentages.	
	1896.	1897.	1896.	1897.
Under 60.00 per cent.....	9	3	15.79	5.26
60.00 but under 70.00 per cent.....	15	17	26.31	29.83
70.00 but under 80.00 per cent.....	25	32	43.86	56.14
80.00 but under 90.00 per cent.....	6	4	10.53	7.02
90.00 per cent. and over.....	2	1	3.51	1.75
Totals	57	57	100.00	100.00

From the above table it is seen that the class reporting the average proportion of business done to be 70 but under 80 per cent. includes more industries than any of the others, being 43.86 per cent. of all industries in 1896, and 56.14 per cent in 1897. A sharp decrease is noted in the class "under 60 per cent.," there being nine industries in this class in 1896, or 15.79 per cent. of all, dropping to three industries in 1897, representing 5.26 per cent.

Combining the three classes showing the highest percentage, we find that they represent 57.90 per cent. of all industries in 1896, and 64.91 per cent. in 1897.

The average proportion of business done in the seven specified industries is brought forward in the following table:

INDUSTRIES.	No. of establishments considered.	AVERAGE PROPORTION OF BUSINESS DONE.		INCREASE (+) OR DECREASE (-) IN 1897.	
		1896.	1897.	Proportion	Percentage
Flour and feed.....	86	70.37	75.27	+ 4.90	+ 6.96
Lager beer	71	61.35	64.34	+ 2.99	+ 4.87
Leather	33	73.69	79.61	+ 5.92	+ 8.03
Lumber, lath and shingles.....	168	61.20	70.00	+ 8.80	+ 14.37
Machines and machinery	86	64.84	68.01	+ 3.17.	+ 4.88
Paper and pulp.....	34	83.20	83.00	- 0.20	- 0.24
Sash, doors, blinds, etc.....	73	66.25	69.76	+ 3.51	+ 5.29
Other industries*	928	69.55	71.65	+ 2.10	+ 3.02
All industries	1,479	69.53	71.80	+ 2.27	+ 3.26

* Railway equipment omitted.

With the exception of paper and pulp, which shows the slight decrease of 0.20 per cent. in proportion of business done, all the industries in the above table show a gain over 1896, the greatest of which is found in lumber, lath, etc., it being 8.80 per cent. Leather comes next, with 5.92 per cent., and flour and feed with 4.90 per cent. The increase in the lager beer industry is the lowest in the group, being 2.99 per cent. The other industries, aside from the seven, indicate 2.10 per cent. increase, and for all industries 2.27 per cent.

DAYS IN OPERATION.

The table containing the statistical information in relation to the average number of days in operation is found on page 625.

From that page we reproduce the final lines, showing that the

average number of days in operation for all industries was 263.40 in 1896, and 270.81 in 1897, an increase of 7.41 days.

For the purpose of further comparison of the time in operation in the several industries, we present the following condensed table.

The time in operation is arranged into classes or groups with the number of industries belonging in each group, and the relative percentages which each group bears to the total number of industries, as follows:

CLASSIFICATION OF DAYS IN OPERATION.	NUMBER OF INDUSTRIES.		PERCENTAGES.	
	1896.	1897.	1896.	1897.
Under 200 days	3	2	5.17	3.45
200 days but under 230 days	5	2	8.62	3.45
230 days but under 250 days	11	7	18.96	12.07
250 days but under 270 days	9	11	15.52	18.96
270 days but under 290 days	19	23	32.76	39.66
290 days but under 300 days	4	7	6.90	12.07
300 days and over.....	7	6	12.07	10.34
Totals	58	58	100.00	100.00

In the foregoing table we find the industries that were in operation from 270 to 290 days to be the most numerous in both years. In 1896 they constituted 32.76 per cent., and in 1897, 39.66 per cent. of the total number of industries. A decrease is noted in the first three classes, or up to 230 but under 250 days, with one industry less in the class representing 300 days and over.

However, combining the last three classes, or groups, it is found that the industries in operation from 270 to 300 days and over comprised 51.72 per cent. of all industries in 1896, and 62.07 per cent. in 1897.

In the following table the average number of days in operation in the seven selected industries is shown :

INDUSTRIES.	No. of establishments considered.	AVERAGE NUMBER OF DAYS IN OPERATION.		INCREASE (+) OR DECREASE (-) IN 1897.	
		1896.	1897.	Days.	Percentage.
Flour and feed.....	86	263.66	271.42	+ 7.76	+ 2.94
Lager beer	71	301.37	300.97	- 0.40	- 0.13
Leather	33	280.16	293.03	+ 12.87	+ 4.59
Lumber, lath and shingles.....	163	190.38	203.91	+ 13.53	+ 7.11
Machines and machinery.....	86	272.64	282.88	+ 10.24	+ 3.75
Paper and pulp.....	54	288.78	287.85	- 0.93	- 0.35
Sash, doors, blinds, etc.....	73	248.02	257.14	+ 9.12	+ 3.67
Other industries	948	263.38	270.80	+ 7.40	+ 2.81
All industries	1,499	263.40	270.81	+ 7.41	+ 2.81

In the above table two industries, lager beer and paper and pulp, show a slight decrease in 1897, being less than one-half day in the one and less than one day in the other. Flour and feed exhibits an increase of nearly 8 days; leather, about 13 days; lumber, lath, etc., about 14 days; machines and machinery, about 10 days, and sash, doors, etc., about 9 days. The increase in the other industries aside from the seven was over seven days, and the average gain in all industries the same.

The following summary reproduces the leading statistical facts relative to all industries:

CLASSIFICATION.	1896.	1897.	INCREASE (+) OR DECREASE (-) IN 1897.	
			Amount.	Per cent.
Number of private firms.....	619	625+	6+	0.99
Number of corporations	614	608-	6-	0.98
Number of partners.....	1,134	1,325+	191+	16.84
Number of stockholders.....	7,214	7,716+	502+	6.96
Amount of capital invested.....	\$175,905,124	\$189,760,669+	\$13,855,545+	7.87
Value of stock used	\$87,027,266	\$98,130,070+	\$11,102,804+	12.76
Value of goods made and work done..	\$155,152,906	\$169,946,673+	\$14,793,767+	9.53
Persons employed:				
Average number	80,051	87,534+	7,483+	9.35
Smallest number	65,569	71,207+	5,638+	8.60
Greatest number	99,546	109,839+	10,293+	10.33
Excess of greatest over smallest number	33,977	38,632+	4,655+	13.70
Total amount paid in wages.....	\$31,749,822	\$36,583,044+	\$4,833,222+	15.22
Average yearly earnings.....	\$386.63	\$416.79+	\$30.16+	7.80
Average proportion of business done....	69.53	71.80+	2.27+	3.26
Average number of days in operation..	263.40	270.81+	7.41+	2.81

Comparisons in the above table will be more comprehensive when it is borne in mind that the items of which the table is composed are the totals from returns rendered by identical establishments reporting for each year.

With but one exception, for every item of the above table the percentages indicate an increase. That exception is in the number of corporations, which show a decline of 0.98 per cent. Private firms correspondingly gains by about the same percentage. The number of partners increased 16.84 per cent., and though the number of corporations show a slight decrease, the number of stockholders nevertheless increased 6.96 per cent.

It will be seen that the amount of capital invested increased to the extent of 7.87 per cent.; value of stock used, 12.76 per cent., and value of goods made and work done, 9.53 per cent. An increase of 9.35 per cent is shown in the average number of persons employed—8.60 per cent. in the smallest number, and 10.33 per cent. in the greatest number—while the excess of greatest over smallest number of persons employed indicates an increase of 13.70 per cent.

The total amount paid in wages exhibits an increase of 15.22 per cent., and an increase of 7.80 per cent. is shown for the average yearly earnings. The average proportion of business done, based upon the full productive capacity of the establishments, was greater by 3.26 per cent in 1897 than in 1896, and the average number of days in operation exceeded 1896 by 2.81 per cent.

By the term, "value of goods made and work done," made use of in this report thus far, is, of course, meant the gross value of the goods made, or their selling price, in other words, the gross product. We shall in the next table make use of the term "industry product," and an explanation of the term is necessary.

If we subtract from the value of goods made (gross product) the value of stock and other materials consumed in the processes of manufacture, in the different industries, we have remaining the actual result of the productive forces in the industry, that is, the product created above the value of stock and materials used. To this balance or remainder we apply the term "industry product." This industry product is divided into two parts. Labor,

as one of the leading factors of production, receives its share of the product in the form of wages; the other part remaining as a fund from which are paid profits, freight, salaries, insurance, interest, rents, repairs, commissions, etc., that is to say, "a profit and minor expense fund."

A series of separate tables are next given for the seven selected industries, for the purpose of comparison between the two years, 1896 and 1897. Some of the items made use of are reproduced from preceding tables, but the points brought out in these tables are the actual product per \$1,000 of capital invested, the average product per employe, based both upon the industry product and the gross product; the percentage of the industry product, as well as the gross product paid in wages; the percentage devoted to other expenses based both on gross and industry product; the percentage of profit and other expense fund of capital invested, and the average investment to each partner or stockholder.

The first table in the series is for:

FLOUR AND FEED (86 ESTABLISHMENTS).

Classification.	1896.	1897.
Amount of capital invested.....	\$6,449,116	\$7,411,133
Value of goods made and work done (gross product).....	19,186,223	22,016,981
Value of stock and other materials used in production.....	15,889,410	18,724,577
Industry product (gross product less value of stock and materials).....	3,296,813	3,292,404
Wages (labor's direct share of product).....	547,830	586,731
Profit and minor expense fund (industry product less wages).....	2,748,983	2,705,673
Percentage of industry product paid in wages.....	16.62	17.82
Percentage of industry product devoted to profit and minor expenses.....	83.38	82.18
Percentage of profit and minor expense fund of capital invested.....	42.63	36.58
Product per \$1,000 capital invested (industry product).....	511.20	430.75
Average product per employe (industry product).....	3,010.71	2,908.48
Percentage of value of gross product paid in wages.....	2.86	2.66
Percentage of value of gross product devoted to profit and minor expenses.....	14.33	12.29
Average investment to each partner or stockholder.....	15,068	12,466
Average gross product to each employe.....	17,522	19,245
Average yearly earnings per employe.....	500.30	518.31
Average number of persons employed.....	1,095	1,144

The percentage of the industry product paid in wages in the above industry is 16.62 in 1896 and 17.82 in 1897, an increase in the latter year. Comparing this with the percentage of the gross product paid in wages, we find it to be 2.86 per cent. in 1896, and 2.66 per cent. in 1897, or a slight decrease for the latter year. The reason for this apparent difference, namely, an increase in the percentage allotted to wages considered from the

point of industry product, and a decrease for the same year when considered from the point of gross product, is found by examining the value of the gross product and the value of stock and materials used. It is seen that the value of the gross product in 1897 is 14.75 per cent. in excess over that of 1896, but the value of stock and materials consumed is even greater by over 3 per cent., being 17.84 per cent. greater than in 1896. As the value of the industry product is found by subtracting the value of stock and materials consumed from that of the gross product, it leaves in this instance the industry product practically the same for both years. The industry product and the gross product being both used as divisors to get the percentage paid in wages, the effect upon the result is plainly seen, as the total amount paid in wages is but little higher in 1897 than in 1896. What is true in this respect regarding the above industry, is also true in a greater or less degree in all the other industries.

The percentage of industry product devoted to profit and minor expenses was 83.38 per cent. in 1896 to 82.18 in 1897, and the percentage of the gross product for the same purpose was 14.33 in 1896 to 12.28 in 1897, or in other words, the manufacturers received less in 1897 than in 1896 with which to pay the same expenses. The percentage of this profit and expense fund on the amount of capital invested was 42.63 in 1896, and 36.58 in 1897.

The productive capacity of each \$1,000 invested in the above industry was \$511.20 in 1896, falling to \$430.75 in 1897. This is a decrease of 15.73 per cent. The solution for this decrease is again found in the practically unchanged value of the industry product for the two years. As will be seen in the above table, the capital invested to manufacture this product was increased in 1897 by 14.91 per cent., or nearly the equivalent of the above decrease. This fact is also applicable to other industries.

The average value of industry product per employe is seen to be \$3,010.71 for 1896, and \$2,908.48 for 1897, a decrease of 3.39 per cent. The increase by this same per cent. of the number of persons employed to produce the same amount of goods, explains this decrease. The average gross product per employe

was \$17,522 in 1896 and \$19,245 in 1897, an increase of 9.83 per cent. in the individual output.

The average investment per partner or stockholder was \$15,068 in 1896 and \$12,466 in 1897, a decrease in the average individual investment of \$2,602, indicating an increased number of partners and stockholders.

The following little table, which may be considered as part of the above industry presentation, indicates by percentages the ratio of gross product to the amount of capital invested. The capital in each industry is in each instance considered as 100. The percentage indicating the gross product is the relative proportion said product bears to the amount of capital invested. If the value of the gross product is greater than the amount of capital invested, it is indicated by a percentage greater than 100, but if the opposite is true, a percentage less than 100 is shown.

Thus, in the following industry—flour and feed,—as will be seen in the table next following, the value of goods made, or gross product, was nearly three times as great as the amount of capital it took to produce it. Both years show over 297 per cent., which is an excess of value of goods made over the amount of capital invested of over 197 per cent.

The table follows:

FLOUR AND FEED.

CLASSIFICATION.	1896.		1897.	
	Per cent.	Per cent.	Per cent.	Per cent.
Capital	100.00	.....	100.00	.....
Value of goods made.....	.....	297.50	.....	297.08
Excess of value of goods made over capital invested	197.50	.....	197.08	.....
Total	297.50	297.50	297.08	297.08

The next presentation relates to lager beer.

LAGER BEER (71 ESTABLISHMENTS).

Classification.	1896.	1897.
Amount of capital invested.....	\$33,943,545	\$35,539,091
Value of goods made and work done (gross product).....	15,394,071	16,945,217
Value of stock and other materials used in production.....	3,270,795	3,702,671
Industry product (gross product less value of stock and materials)	12,123,276	13,242,546
Wages (labor's direct share of product).....	1,649,640	1,686,468
Profit and minor expense fund (industry product less wages)	10,473,636	11,556,078
Percentage of industry product paid in wages.....	13.61	12.73
Percentage of industry product devoted to profit and minor expenses	86.39	87.27
Percentage of profit and minor expense fund of capital invested	30.87	32.54
Product per \$1,000 capital invested (industry product).....	357.16	372.62
Average product per employe (industry product).....	3,869	4,260
Percentage of value of gross product paid in wages.....	10.71	10.54
Percentage of value of gross product devoted to profit and minor expenses	68.04	68.20
Average investment of each partner or stockholder.....	71,450	70,735
Average gross product to each employe.....	4,913	5,452
Average yearly earnings per employe.....	526.54	542.62
Average number of persons employed.....	3,133	3,108

The percentage of industry product paid in wages in the above industry in 1896 and 1897 was 13.61 and 12.73, respectively, being a small decrease for the last named year. The percentage of the gross product allotted to wages also shows a slight decrease for 1897. The percentages of industry and gross products used for profit and other expenses show a small increase over 1896, as does the industry product per 1,000 of capital invested.

The average industry and gross product per employe show an increase of \$391 and \$539, respectively. The average investment, however, shows a decrease of \$1,215 per partner or stockholder for 1897.

The relation of the gross product to the capital invested is indicated in the table below:

LAGER BEER.

CLASSIFICATION.	1896.		1897.	
	Per cent.	Per cent.	Per cent.	Per cent.
Capital	100.00	.....	100.00	.....
Value of goods made.....	.....	45.35	.....	47.68
Excess of capital over value of goods made.....	.....	54.65	.....	52.32
Total	100.00	100.00	100.00	100.00

It is seen that the relation of the value of goods made was 45.35 per cent. of the capital invested in 1896, the proportion increasing in 1897 to 47.68 per cent.

A similar comparison follows for leather :

LEATHER (33 ESTABLISHMENTS).

Classification	1896.	1897.
Amount of capital invested	\$10,394,318	\$12,124,012
Value of goods made and work done (gross product).....	13,445,346	15,153,361
Value of stock and other materials used in production.....	9,789,314	11,320,816
Industry product (gross product less value of stock and materials)	3,656,032	3,832,545
Wages (labor's direct share of product).....	1,790,571	2,028,342
Profit and minor expense fund (industry product less wages)	1,865,461	1,804,203
Percentage of industry product paid in wages.....	48.98	52.92
Percentage of industry product devoted to profit and minor expenses	51.02	47.08
Percentage of profit and minor expense fund of capital invested	17.94	14.88
Product per \$1,000 capital invested (industry product).....	351.73	316.11
Average product per employe (industry product).....	842.40	770.84
Percentage of value of gross product paid in wages.....	13.31	13.38
Percentage of value of gross product devoted to profit and minor expenses	13.87	11.91
Average investment to each partner or stockholder.....	5,889	6,650
Average gross product to each employe.....	3,098	3,110
Average yearly earnings per employe.....	412.57	426.66
Average number of persons employed.....	4,340	4,872

In this industry the percentage of industry product paid in wages was 48.98 in 1896 and 52.92 in 1897, an increase for the latter year. Correspondingly, the percentage devoted to profit and other expenses shows a decrease for the same period, being 51.02 in 1896 and 47.08 in 1897. The profit and minor expense fund was 17.94 per cent. of capital invested in 1896, and 14.88 per cent in 1897. The percentage of gross product paid in wages was practically the same for both years, being 13.31 and 13.38, respectively.

The product per \$1,000, measured by the industry product, was less in 1897 than in 1896. This was also true of the average industry product per employe. The average gross product to each employe, and the average individual investment show a small increase in the latter year.

The relative proportion of value product to the amount of capital in this industry is found in the next table :

LEATHER.

CLASSIFICATION.	1896.		1897.	
	Per cent.	Per cent.	Per cent.	Per cent.
Capital	100.00	.....	100.00	.....
Value of goods made.....		129.35		124.99
Excess of value of goods made over capital invested	29.35	.....	24.99	.....
Total	129.35	129.35	124.99	124.99

It is seen that the value of product for each year exceeds the amount of capital invested, being 29.35 per cent in excess in 1896 and 24.99 per cent. in 1897, indicating a smaller proportionate output in the latter year.

The next table relates to lumber, lath and shingles :

LUMBER, LATH AND SHINGLES (168 ESTABLISHMENTS.)

Classification.	1896.	1897.
Amount of capital invested	\$44,989,633	\$45,642,002
Value of goods made and work done (gross product).....	18,322,764	22,043,162
Value of stock and other materials used in production.....	9,861,062	12,187,522
Industry product (gross product less value of stocks and materials	8,461,702	9,855,640
Wages (labor's direct share of product).....	3,904,245	4,566,264
Profit and minor expense fund (industry product less wages)	4,557,457	5,288,376
Percentage of industry product paid in wages.....	46.14	46.33
Percentage of industry product devoted to profit and minor expenses	53.86	53.67
Percentage of profit and minor expense fund of capital invested	10.12	11.53
Product per \$1,000 capital invested (industry product)....	188.08	215.93
Average product per employe (industry product).....	733.16	833.31
Percentage of value of gross product paid in wages.....	21.31	20.72
Percentage of value of gross product devoted to profit and minor expenses	24.87	28.99
Average investment to each partner or stockholder.....	70,627	61,927
Average gross product to each employe.....	1,587	1,864
Average yearly earnings per employe.....	338.26	386.09
Average number of persons employed.....	11,542	11,827

A comparison between the years 1896 and 1897 reveals slight changes in the percentage of industry product paid in wages, the percentage of industry product devoted to profit and other expenses, and the percentage of the same items of capital invested.

The average product per employe, both of the industry product and of the gross product, shows a large increase in 1897, being \$100.25 and \$277, respectively.

The amount of product per \$1,000 capital seems to be very

small, being \$188.08 in 1896 and \$215.93 in 1897, but this is, no doubt, owing to the great amount of capital invested in this industry.

The percentage of gross product paid in wages shows a slight decrease for 1897, as does the percentage of gross product used for profit and other expenses, being 24.87 in 1896 and 23.99 in 1897. The profit and minor expense fund was 10.12 per cent. of capital invested in 1896 and 11.58 per cent. in 1897, indicating a little better return on the capital invested than in the first named year.

The great decline of \$8,700 in the average investment per partner or stockholder in 1897 would indicate a greater diffusion of capital in that industry, inasmuch as the total amount of capital invested was increased considerably in 1897.

The relation of gross product to the amount of capital in the above industry is found in the following table:

LUMBER, LATH AND SHINGLES.

CLASSIFICATION.	1896.		1897.	
	Per cent.	Per cent.	Per cent.	Per cent.
Capital	100.00	.....	100.00	.....
Value of goods made.....	.....	40.73	.....	48.30
Excess of capital over value of goods made.....	.....	59.27	.....	51.70
Totals	100.00	100.00	100.00	100.00

The proportionate value of goods made to that of invested capital is seen to be higher in 1897, the percentage standing 40.73 and 48.30, respectively, and the corresponding excess of capital over value of goods made is 59.27 and 51.70 per cent., respectively, for the two years.

The next table is a comparison for machines and machinery:

MACHINES AND MACHINERY (86 ESTABLISHMENTS).

Classification.	1896.	1897.
Amount of capital invested.....	\$8,244,923	\$9,038,030
Value of goods made and work done (gross product).....	7,662,023	8,155,581
Value of stock and other materials used in production.....	3,059,369	3,333,014
Industry product (gross product less value of stock and materials).....	4,602,654	4,822,567
Wages (labor's direct share of product).....	2,195,742	2,343,671
Profit and minor expense fund (industry product less wages)...	2,406,912	2,478,896
Percentage of industry product paid in wages.....	47.71	48.59
Percentage of industry product devoted to profit and minor expenses.....	52.29	51.41
Percentage of profit and minor expense fund of capital invested.....	29.19	27.42
Product per \$1,000 capital invested (industry product).....	558.24	533.58
Average product per employe (industry product).....	1,066.17	1,075.00
Percentage of value of gross product paid in wages.....	28.66	28.73
Percentage of value of gross product devoted to profit and minor expenses.....	31.41	30.39
Average investment to each partner or stockholder.....	27,949	27,555
Average gross product to each employe.....	1,775	1,813
Average yearly earnings per employe.....	508.63	522.44
Average number of persons employed.....	4,317	4,486

In the above industry it is noticeable that substantially the same conditions prevail in one year as in the other, the variation in nearly all percentages being less than one per cent. The percentage of profit and other expense fund of capital invested offers one exception, the difference of 1.77 per cent. being noted as a decrease for 1897, and the percentage which this fund forms of the value of the gross product also shows a decrease of little more than one per cent., being 31.41 and 30.39 per cent., respectively.

The relation of capital and product is found in the following table:

MACHINES AND MACHINERY.

CLASSIFICATION.	1896.		1897.	
	Per cent.	Per cent.	Per cent.	Per cent.
Capital.....	100.00	.....	100.00	.....
Value of goods made.....	.....	92.93	.....	90.24
Excess of capital over value of goods made.....	.....	7.07	.....	9.76
Totals.....	100.00	100.00	100.00	100.00

In the above industry the value of goods made in relation to the capital invested is represented by 92.93 per cent. in 1896

and 90.24 per cent. in 1897, indicating a small decrease in the proportionate output for the last mentioned year.

The next table is for paper and pulp:

PAPER AND PULP (34 ESTABLISHMENTS).

Classification.	1896.	1897.
Amount of capital invested.....	\$8,224,977	\$9,014,723
Value of goods made and work done (gross product).....	6,592,166	6,555,806
Value of stock and other materials used in production.....	3,392,882	3,481,577
Industry product (gross product less value of stock and materials).....	3,199,284	3,074,229
Wages (labor's direct share of product).....	1,243,243	1,240,476
Profit and minor expense fund (industry product less wages).....	1,956,041	1,833,753
Percentage of industry product paid in wages.....	38.86	40.35
Percentage of industry product devoted to profit and minor expenses.....	61.14	59.65
Percentage of profit and minor expense fund of capital invested.....	23.41	20.34
Product per \$1,000 capital invested (industry product).....	389.04	341.02
Average product per employe (industry product).....	1,026.39	975.32
Percentage of value of gross product paid in wages.....	18.86	18.88
Percentage of value of gross product devoted to profit and minor expenses.....	29.67	27.97
Average investment of each partner or stockholder.....	43,518	50,930
Average gross product to each employe.....	2,115	2,079
Average yearly earnings per employe.....	398.85	393.71
Average number of persons employed.....	3,117	3,152

In this industry the percentage paid in wages of the industry product increased from 38.66 per cent. in 1896 to 40.35 per cent. in 1897. A corresponding decrease is found in the percentage of industry product devoted to profit and minor expenses, this percentage being 61.14 in 1896 and 59.65 in 1897. The percentage of profit and minor expense fund of capital invested was greater in 1896, being 23.41 to 20.34 per cent. in 1897.

The percentage of gross product paid in wages is almost identical for both years, while the percentage of the gross product to profit and expense fund shows a small decline, being 29.67 in 1896 and 27.97 per cent. in 1897.

The industry product per \$1,000 capital invested, the average product per employe both of the industry and gross product, show a falling off. The average investment per partner or stockholder shows a noticeable increase of \$7,412 for the latter year.

The relation of capital and product is presented as follows:

PAPER AND PULP.

CLASSIFICATION.	1896.		1897.	
	Per Cent.	Per Cent.	Per Cent.	Per Cent.
Capital	100.00	.....	100.00	.....
Value of goods made .....	.....	80.15	.....	72.72
Excess of capital over value of goods made .....	.....	19.85	.....	27.28
Totals	100.00	100.00	100.00	100.00

The value of goods made in 1897 in the above industry is relatively smaller than in 1896 when compared to the amount of capital invested, being 80.15 per cent. in 1896 to 72.72 in 1897. The excess of capital over the value of product showing 19.85 per cent. and 27.28 per cent., respectively, for the two years.

The next presentation is for sash, doors, blinds, etc.:

SASH, DOORS, BLINDS AND MOULDINGS (73 ESTABLISHMENTS)

Classification.	1896.	1897.
Amount of capital invested	\$5,504,932	\$5,541,357
Value of goods made and work done (gross product).....	5,002,045	5,260,706
Value of stock and other materials used in production.....	2,680,742	2,879,007
Industry product (gross product less value of stock and materials)	2,321,303	2,381,699
Wages (labor's direct share of product).....	1,086,510	1,159,449
Profit and minor expense fund (industry product less wages)..	1,234,793	1,223,250
Percentage of industry product paid in wages.....	46.80	48.68
Percentage of industry product devoted to profit and minor expenses	53.20	51.32
Percentage of profit and minor expense fund of capital invested	22.43	22.06
Product per \$1,000 capital invested (industry product).....	421.68	429.80
Average product per employe (industry product).....	723.82	679.12
Percentage of value of gross product paid in wages.....	21.72	20.92
Percentage of value of gross product devoted to profit and minor expenses	24.68	23.23
Average investment to each partner or shareholder.....	20,388	20,373
Average gross product to each employe.....	1,559	1,500
Average yearly earnings per employe.....	338.79	330.61
Average number of persons employed.....	3,207	3,507

No material change is found in any of the items presented for the above industry. All the percentages but one show a slight decrease for 1897. The percentage of industry product paid in wages is the only one showing an increase, being 46.80 per cent. in 1896 and 48.68 per cent. in 1897.

The industry product per \$1,000 of capital invested shows a little better return for 1897, being \$429.80 to \$421.68 for 1896.

The relative position of the value of goods made to that of capital invested is shown in the following table of percentages:

SASH, DOORS, BLINDS, ETC.

CLASSIFICATION.	1896.		1897.	
	Per cent.	Per cent.	Per cent.	Per cent.
Capital	100.00	.....	100.00	.....
Value of goods made.....	.....	90.86	.....	94.94
Excess of capital over value of goods made.....	.....	9.14	.....	5.06
Totals	100.00	100.00	100.00	100.00

For the two years considered, the value of the goods made has nearly equalled the amount of capital used to produce it. Thus, in 1896 it was 90.86 per cent. of the capital used, increasing in 1897 to 94.94 per cent.

The final table relates to all industries:

ALL INDUSTRIES.

Classification.	1896.	1897.
Amount of capital invested.....	\$175,905,124	\$189,760,669
Value of goods made and work done (gross product).....	155,152,906	169,946,673
Value of stock and other materials used in production.....	87,027,266	98,130,070
Industry product (gross product less value of stock and materials	68,125,640	71,816,603
Wages (labor's direct share of product).....	31,749,822	36,583,044
Profit and minor expense fund (industry product less wages)	36,375,818	35,233,559
Percentage of industry product paid in wages.....	46.64	50.94
Percentage of industry product devoted to profit and minor expenses	43.36	49.06
Percentage of profit and minor expense fund of capital invested	20.67	18.56
Product per \$1,000, capital invested (industry product).....	387.29	325.76
Average product per employe (industry product).....	851.02	820.44
Percentage of value of gross product paid in wages.....	20.46	21.52
Percentage of value of gross product devoted to profit and minor expenses	23.42	20.73
Average investment to each partner or stockholder.....	21,071	20,989
Average gross product to each employe.....	1,903	1,941
Average yearly earnings per employe.....	386.63	416.79
Average number of persons employed.....	80,051	87,534

The relative condition as between the two years for all industries is to some extent shown in the percentages in the above table.

When we analyze the proportions of the industry product paid in wages, and the amount going to the profit and minor ex-

pense fund, we find that a greater percentage was paid in wages in 1897, the percentages being 46.64 and 50.94, respectively.

On the other hand, the part devoted to profit and minor expenses was more favorable to the manufacturers in 1896 than in 1897, the percentage being 53.36 for the first named year and 49.06 for the last.

The percentage which this profit and expense fund forms of the amount of capital invested, is corroborative of the last mentioned item, the percentages standing 20.67 for 1896 and 18.56 for 1897. The percentage paid in wages of the gross product indicates the same as the percentage of the industry product, namely, that the year 1897 was more favorable to wages than the preceding year, the percentages being 20.46 and 21.52, respectively.

The percentage of the gross product devoted to profit and minor expenses was 23.42 in 1896 and 20.73 in 1897.

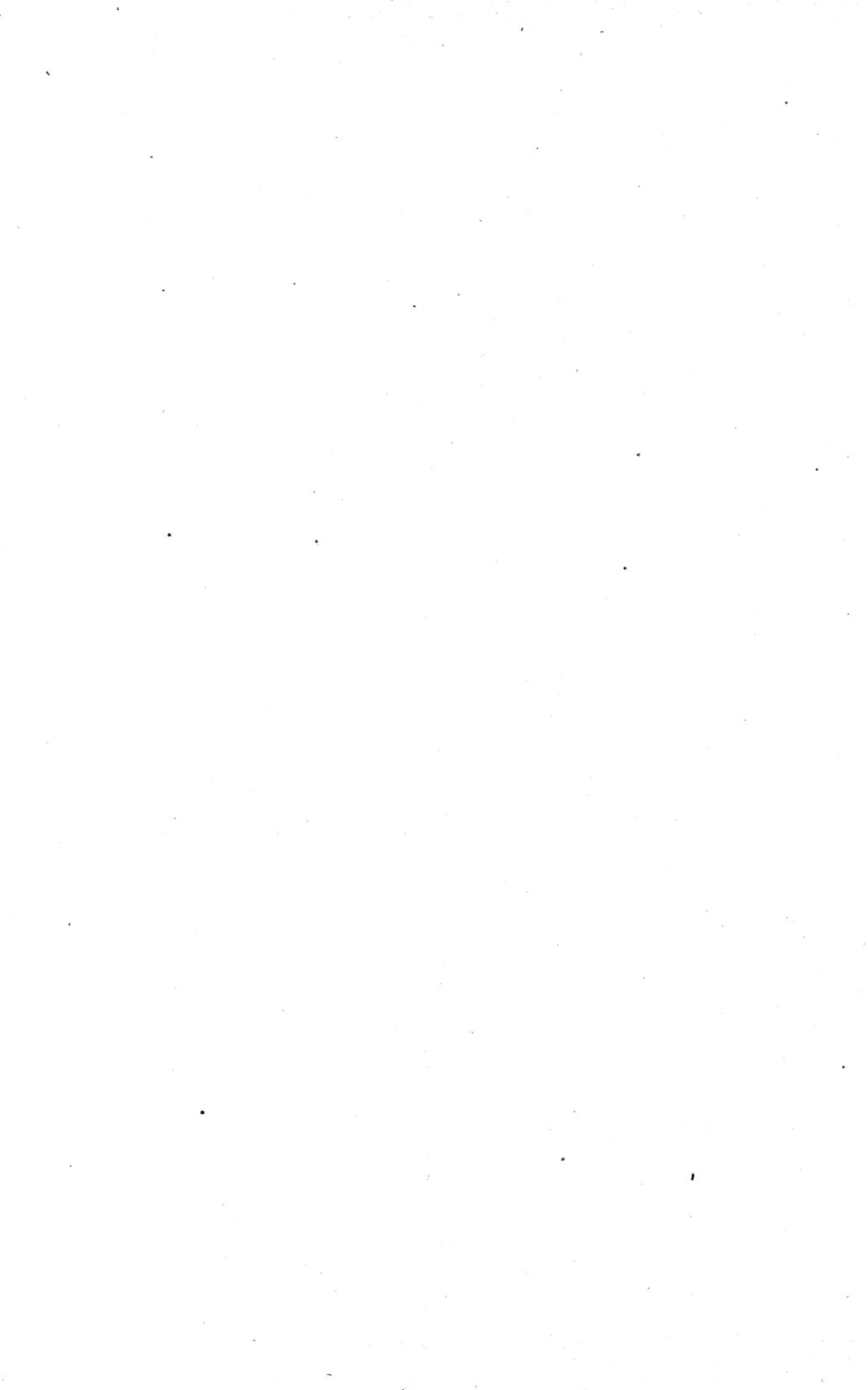
The efficiency of capital appears to be less in 1897, as the value of the industry product per \$1,000 capital invested was \$387.29 in 1896 to \$325.76 in 1897. The average industry product per employe was also a little less for the latter year, but the average to each worker of the gross product shows an increase for 1897.

The average investment per partner or stockholder was practically the same for both years.

The proportion of the gross product to the amount of capital invested is a little higher in 1897, being 89.56 per cent. to 88.20 per cent. the preceding year, as indicated in the following and final table:

ALL INDUSTRIES.

CLASSIFICATION.	1896.		1897.	
	Per- cent- ages.	Per- cent- ages.	Per- cent- ages.	Per- cent- ages.
Capital	100.00	.....	100.00	.....
Value of goods made.....	.....	88.20	.....	89.56
Excess of capital over value of goods made.....	.....	11.80	.....	10.44
Totals	100.00	100.00	100.00	100.00







REPORT

OF THE

STATE SUPERVISOR

OF

Inspectors of Illuminating Oils

OF THE

State of Wisconsin

For the Period Extending from October 1, 1896, to
September 30, 1898.



MADISON
DEMOCRAT PRINTING COMPANY, STATE PRINTER
1899

LETTER OF TRANSMITTAL.

KAUKAUNA, WIS., Oct. 24, 1898.

To His Excellency, EDWARD SCOFIELD,

Governor of the State of Wisconsin.

SIR:—In conformity to the law relating to the inspection of illuminating oils, I have the honor to submit a detailed report of the transactions of this department for the period beginning October 1st, 1896, and ending September 30th, 1898.

Respectfully submitted,

HERBERT B. TANNER, M. D.,

State Supervisor of Oils.

REPORT OF STATE SUPERVISOR OF OILS.

HON. EDWARD SCOFIELD,

Governor of Wisconsin.

SIR:—In accordance with the statutes providing for the inspection of illuminating oils, I herewith submit my second report as state supervisor of oils for the biennial period ending September 30th, 1898.

During the two years covered by this report a few changes have been made in the list of deputy inspectors owing to death, resignation and removal from the state.

The only death among the deputies was that of Mr. Ervin W. Chamberlain of La Crosse. He died December 27th, 1897.

The boundaries of some of the districts have been changed, thereby improving the service by placing the deputies more nearly in the center of their respective districts, enabling them to respond to calls for inspection with more despatch.

As new bulk tank stations were established in the state, the service demanded a small increase in the force of deputies; and their number has increased from 58, given in my last report, to 62 at the present time.

A careful examination of the table annexed to this report, showing the name, postoffice address and territory assigned each deputy will show that the districts are now so arranged that every portion of the state is covered, and in charge of experienced deputies centrally located.

During the period covered by this report I have personally visited many of the deputies several times and all of them at least once, with the exception of 18 out of the 62. The law does not require this of the state supervisor, but I am convinced that occasional visits of this kind improve the service, as it gives the state supervisor a better knowledge of the local conditions, and the personal contact and exchange of ideas, serves to make the

General Report.

deputies more expert and alert to perform their duties. I take great pleasure in commending my staff of deputies for their efficient aid in enforcing the law and assisting me in the discharge of the duties of my department.

The legislature in 1897 passed a new act regulating the inspection of illuminating oils; the reason for asking a revision of the law was a defect in the title of the old law, and further, new commercial relations had taken place through the extension of bulk tank stations and tank wagon delivery, so that new provisions were needed.

In 1881 the legislature passed an act entitled "an act to regulate the sale of illuminating oils and to *repeal* chapter 269 of the laws of 1880." Section 1 of this act says: "Section 3 of chapter 269 of the laws of 1880 is hereby *amended*." As I had occasion to bring an action against an oil firm for altering our brands, thereby violating the law. In looking up the matter I found that one of my predecessors in office had passed through the same experience, and in that case it was argued by counsel that the title of an act is as valid as the letter of the law itself, and that the repeal of the law of 1880 was intended and accomplished by the title of the law of 1881. Judge Mallory, before whom the case was brought, expressed some doubt as to the view the supreme court might take of the constitutionality of the act of 1881 on account of its defective title. As this question had not been judicially passed upon and the facts presented made it difficult to successfully bring any action to prevent, or punish violations of the law, it was thought best to ask the legislature to repass the act.

Several minor changes were incorporated, such as providing for the inspection of heating oils, i. e., oils used in boilers for generating steam, stoves for cooking and lamps for heating, as well as illuminating purposes; also providing in detail for inspecting tank cars of oil, and adding a flash test, as well as the burning test, the flash test being fixed at 100 degrees Fahrenheit. This flashing point is the point at which the oil generates a vapor, the composition and character of which is that of ordinary

General Report.

illuminating gas. The flash is produced by applying a lighted taper to the heated oil, and when it takes place, indicates that the gas has formed an explosive mixture with atmospheric air. No oil that flashes below 100 degrees can now be legally sold in Wisconsin. The burning point was left at 120 degrees, as under the old law. The burning point is the point at which the oil itself takes fire upon the application of a lighted taper. The law, as now in force, prevents the introduction into the state, of oils of low flashing point, as they are relatively more dangerous than a low burning point.

Two years further use of the Wisconsin gas torch has demonstrated that it is a valuable addition to the instruments used for testing oils. Several other states are now using it, as well as some of the largest refiners of oil. A brief description of this instrument, as devised by your state supervisor, may not be out of place. This instrument is used to furnish a small uniform flame to ignite the inflammable vapor which arises from the oil while testing the same, and does away with the use of waxed string, thread, matches, broom straws, tooth picks, etc., all of which make too large a flame, unduly heating the surface of the oil and preventing an accurate test. The instrument named consists of a hollow, circular nickel-plated brass reservoir, $5\frac{1}{2}$ inches long by one inch in diameter, with a cap at one end which unscrews, opening a space in the tube into which is poured the gasoline, which forms the vapor, the gasoline is absorbed by a lining of asbestos. A double rubber bulb is attached to the cap which forces the air into the chamber, thoroughly mixing the air and vapor as it passes backwards and forwards several times before finally escaping from the opposite end through a small metal cylinder. The size of the flame is regulated by a small stopcock in this cylinder and should be drawn down to one quarter of an inch in size. Thus all inspections are made with a uniform sized flame, and are made much more accurate.

I am pleased to report that it has not been necessary to reject any oil during the period covered by this report. The oil companies appreciating the fact that they have to face a rigid in-

General Report.

spection, are careful to ship in only such oil as will pass, knowing that a rejection means embarrassment and heavy additional expense to them.

The quality of oil supplied consumers in the state has steadily improved in illuminating power as well as safety. This result is due in a measure to the demand on the part of consumers for a better oil, and the sharp competition existing in this state among the oil merchants.

No intentional violation or evasion of the law has come to my knowledge, and I believe the provisions of the same have been carried out in every particular and no oil has escaped inspection.

In addition to this report there are appended tables showing the names of all the inspectors with their districts, the distribution of the surplus fund for the two years, the number of barrels inspected in each district for two years, as well as the circular giving directions to the deputies for testing and branding oils,—a short resume of the accidents resulting from the use of petroleum products, and a copy of the law as it now exists.

All of which is respectfully submitted,

H. B. TANNER, M. D.,
State Supervisor of Oils.

Inspectors and Inspectors' Districts.

INSPECTORS OF ILLUMINATING OILS.

Giving the names of the deputy inspectors, with their post office address, and the boundaries of the districts assigned them as in force October 1st, 1898.

Inspector.	Post Office Address.	Territory Forming the Districts.
Dr. H. B. Tanner.	Kaukauna	State supervisor of oils.
A. P. Church	Antigo	Langlade county, and the towns on the Ashland division of the C. & N. W. Ry. in Shawano county from Antigo to Buckbee inclusive.
Dan Breen	Appleton	Outagamie county, except the city of Seymour, also the city of New London in Waupaca county.
M. J. Hart.....	Ashland	Ashland and Bayfield counties.
H. J. Hughes	Beaver Dam	Towns on the C. M. & St. P. Ry. from Randolph to Rubicon, inclusive, including Fox Lake and Burnett Junction.
Prof. E. G. Smith..	Beloit	South half of Rock county.
W. H. Nehls*.....	Benton	The towns of New Diggings, Elk Grove, Benton, Smelzer, Hazel Green, Shullsburg, White Oak Springs, Monticello, and Jamestown in La Fayette and Grant counties.
Nick Gruber	Black River Falls	Jackson county, except the towns of Garfield, Cleveland and Merrillan.
Jos. Miller	Burlington	Towns of East Troy, Spring Prairie and Lyons in Walworth county, towns of Waterford, Rochester and Burlington in Racine county, towns of Wheatland, Randall and Salem, in Kenosha county.
Fred. Hanson ...	Chetek	Barron, Washburn and Sawyer counties, and towns on the Soo Railway in Chippewa county.
W. H. Howieson...	Chippewa Falls ..	South half of Chippewa county, towns of Thorp, Withee and Hixon, in Clark county, and towns on Wis. Central railway in Dunn county.
Arthur K. Breed..	Chilton	Calumet county, including the village of Kiel in Manitowoc county.
Fred Lindemann ..	Delavan	Towns of Darien, Richmond, Delavan, Sugar Creek, Troy and LaFayette in Walworth county.
H. M. Orlady	Durand	Pepin county, and towns on Burlington Ry. in Buffalo county.
Geo. W. Williams..	Eau Claire	Eau Claire county except the town of Fairchild.
S. S. Lee	Evansville	The city of Janesville and towns on the C. & N. W. Ry. from Janesville to Evansville and Footville inclusive, all in Rock county.
Geo. H. Ferris.....	Fond du Lac	Fond du Lac county except the city of Ripon, the south half of Green Lake county, the towns of Chester, Le Roy, Lomira, Williamstown and Theresa in Dodge county.
S. T. Beattie	Florence	Florence county.
A. M. Anderson*...	Grantsburg	Burnett county.
J. H. Leonard	Green Bay	Brown, Kewaunee and Door counties, and the city of Seymour in Outagamie county.
Robert Dinsmore ..	Hudson	St. Croix county. Towns on C., St. P., M. & O. Ry. in Pierce county.
C. Reible	Hurley	Iron county.
Johnson A. Jackson	Kenosha	Kenosha county, except the towns of Wheatland, Randall and Salem.

*See Appendix for changes.

Inspectors and Inspectors' Districts.

INSPECTORS OF ILLUMINATING OILS — Continued.

Inspector.	Post Office Address.	Territory Forming the Districts.
Wm. H. Luth	La Crosse	La Crosse county, Trempealeau county, except the northern tier of towns; all of the towns on the Burlington Ry. in Vernon county.
J. E. Nethercut....	Lake Geneva	Towns of Geneva, Lynn, Bloomfield, and Walworth in Walworth county.
R. J. McConnell*....	Madison	Dane county, except the towns of Mazomanie and Black Earth, towns on the C. & N. W. Ry. in Columbia county to Okee.
C. L. Newstrom....	Maiden Rock	Pierce county except the towns on the C., St. P., M. & O. Ry.
Richard Magulre*..	Manitowoc	Manitowoc county except the town of Kiel.
W. J. Suelfohn*....	Marinette	Marinette county.
C. H. Doern.....	Marshfield	Wood county, and the towns on the Wis. Cen. Ry. from Marshfield to and including Medford, also Greenwood in Clark county, and the towns of Milan and Athens in Marathon county.
W. A. Scanlan	Menomonie	Dunn county, except the town on the Wis. Cen. Ry.
C. S. Stimers	Merrill	Lincoln county.
Geo. R. Francis...	Merrillan	Towns on the C., St. P., M. & O. Ry. from Merrillan to Mondovi inclusive, also town of Fairchild in Eau Claire county.
Kirke W. Tanner	Milton Jet	Towns of Fulton, Milton, and Lima in Rock county, also Whitewater in Walworth county, and Palmyra in Jefferson county.
Fred W. Kuth	Milwaukee	Milwaukee county.
B. T. Raymond*...	Monroe	Green county, also towns of Blanchard, Argyle, Fayette, Wiota, Darlington, Gratiot and Wayne in La Fayette county.
C. R. Roskie.....	Montello	Marquette, Adams and Waushara counties.
G. N. Huckins	Necedah	Necedah in Juneau county.
C. W. Johnson	Neenah	Cities of Neenah and Menasha in Winnebago county; towns on the Wis. Cen. Ry. from Neenah to Sheridan in Waupaca county inclusive.
Eli M. Wheaton ...	Neillsville	Clark county, except towns of Humbird and Greenwood, and northern tier of towns.
C. J. Francis	Oconto	Oconto county, also towns on C. & N. W. Ry. from Oconto to Clintonville inclusive.
A. A. Heald*.....	Osceola	Polk county.
W. H. Boyd.....	Oshkosh	Winnebago county, except the cities of Neenah and Menasha and the town of Nepeuskum.
M. Christianson ...	Phillips	Price county, and the towns of Westboro, Whittlesey and Chelsea in Taylor county.
John Fawcett*	Platteville	Towns on the C. & N. W. Ry. inclusive between Lancaster Jct., Barneveld, Lancaster, and Platteville. Towns on C., M. & St. P. Ry. inclusive between Platteville, Calamine and Mineral Point. Also towns on the Ill. Cen. Ry. in Iowa county. Also McCartney and Potosi on the Burlington Ry. All of the above in Grant, Iowa and La Fayette counties.

*See Appendix for changes.

Inspectors and Inspectors' Districts.

INSPECTORS OF ILLUMINATING OILS -- Continued.

Inspector.	Post Office Address.	Territory Forming the Districts.
Chas. Mohr, Jr....	Portage	Columbia county, except the towns of Lodi and West Point.
Chas. F. Brewer...	Racine	Racine county, except the towns of Waterford, Rochester and Burlington.
M. W. Shafer	Rhineland	Oneida, Vilas and Forest counties.
Lee McMurtrey ...	Richland Center ..	Richland county.
C. W. Stewart	Ripon	Towns on the C. & N. W. Ry. from Ripon to Princeton inclusive, and towns on the C., M. & St. P. Ry. Ripon to Berlin, inclusive.
J. C. Meyer.....	Sauk City	Towns on the C., M. & St. P. Ry. in Sauk, Dane and Iowa counties, from Prairie du Sac to Spring Green inclusive.
J. B. Stupfell	Sharon	Town of Sharon in Walworth county.
Geo. Sullivan*.....	Sheboygan	Sheboygan county.
T. L. McGlachlin ..	Stevens Point	Portage county. Waupaca county, except the towns on the Wis. Cen. Ry. and the city of New London.
C. J. Wells	Tomah	North half of Monroe county, Juneau county except the towns of Necedah, Plymouth and Wonewoc.
Jos. Omundson ...	Viroqua	Vernon county, except the western tier of towns. Also towns on the C., M. & St. P. Ry. from Viroqua Jct. south.
I. Wertheimer ...	Watertown	Jefferson county except the town of Palmyra; towns on the C. & N. W. Ry. from Watertown to Juneau. Towns on the C., M. & St. P. Ry. from Watertown to Elba.
T. H. Taylor	Waukesha	Waukesha county.
Ed. Heimann	Wausau	Marathon county except the towns of Milan and Athens.
O. P. Vaughan ...	Wauzeka	Crawford county. Towns on the C., M. & St. P. Ry. from Prairie du Chien to and including Avoca; towns on the C. & N. W. Ry. from Woodman to Werlev. Towns on the Burlington Ry. in Grant county to Cassville inclusive.
W. C. Bratz*.....	West Bend	Washington and Ozaukee counties.
John Difor	West Superior	Douglas county.
Jas. R. DeGarmo ..	Wonewoc	Towns on the C. & N. W. Ry. from Summit to Merrimack in Monroe Juneau and Sauk counties.

*See Appendix for changes.

APPENDIX.

Since October 1st, 1898, the following changes have taken place in the list of deputies and their districts:

Mr. W. H. Nehls of Benton has resigned and his territory been turned over to other inspectors as noted below.

Mr. A. M. Anderson of Grantsburg has resigned and Mr. A. E. Nelson of the same place appointed to the vacancy.

Mr. Rob't McConnell of Madison has resigned and Mr. John Curran of the same place appointed to fill the vacancy.

Mr. Richard Maguire of Manitowoc has resigned and Mr. A. A. Whitney of the same place appointed to fill the vacancy.

Mr. W. J. Suelfohn of Marinette has resigned and Mr. Edward Peterson of the same place appointed to fill the vacancy.

The district presided over by Mr. B. T. Raymond of Monroe has been

Oil Inspected.

changed slightly so that it now reads, "Green County and Towns on Ill. Cen. Ry. in LaFayette County."

Mr. A. A. Heald of Osceola has resigned and Mr. S. C. Brown, whose post office address is St. Croix Falls, has been appointed in his place, "Polk Co."

Mr. Geo. Sullivan of Sheboygan has resigned and Mr. C. DeMasters of the same place appointed to fill the vacancy, and the district changed to read, "Sheboygan County only."

Mr. W. C. Bratz of West Bend has had his territory enlarged so that it now reads "Washington and Ozaukee Counties."

Mr. John Fawcett of Platteville has resigned and the territory in Grant, Iowa and LaFayette counties divided as follows:

Mr. Chas E. Stehl (Inspector), post office, Arthur, Grant Co. Territory, Tank stations at Platteville, Lancaster and Cuba City.

Mr. Thos. R. Mundy (Inspector), post office, Dodgeville, Iowa Co. Territory assigned, South half of Iowa county except Mineral Point; also tank stations of Montfort and Fennimore in Grant county.

Mr. James McGinty (Inspector), post office, Darlington, LaFayette County. Territory, LaFayette county except towns on the Ill. Cen. Ry., also Mineral Point in Iowa county.

The following table shows the number of barrels of oil inspected in each district during the two years covered by this report.

TABLE NO. 2.

Showing the number of barrels inspected in each district during the years ending September 30th, 1897 and 1898.

District.	1897.	1898.
Appleton	7,004	5,583
Antigo	2,130	2,249
Ashland	5,854	6,355
Beaver Dam	2,189	1,622
Beloit	2,401	2,402
Benton	1,397	1,248
Black River Falls.....	786	711
Burlington	3,038	3,485
Chetek	2,055	2,606
Chilton	1,391	1,756
Chippewa Falls	3,460	3,314
Delavan	2,224	2,822
Durand	816	656
Eau Claire	5,386	4,926
Florence	310	372
Fond du Lac.....	6,150	7,069
Grantsburg	375	446
Green Bay	11,219	9,191
Hudson	6,060	5,974
Hurley	1,220	1,093
Kenosha	1,618	2,669
La Crosse	7,567	8,226
Lake Geneva	1,264	887
Madison	7,920	7,291
Maiden Rock	64	778
Manitowoc	3,288	4,002
Marinette	3,410	3,625
Marshfield	4,398	4,438
Menomonie	1,195	1,012
Merrill	2,101	2,203
Merrillan	885	1,012
Milton Junction	5,230	5,313
Milwaukee	69,837	68,038
Monroe	2,811	4,396
Montello	1,592	1,702
Necedah	282	560
Neenah	3,389	3,611

Distribution of Surplus Fund.

TABLE NO. 2—Continued.

District.	1897.	1898.
Neillsville	1,095	744½
Oconto	3,024	3,089
Osceola	716	781
Oshkosh	9,427	8,827
Phillips	1,213	1,099
Platteville	4,863	4,321
Portage	2,859	4,278
Racine	6,450	7,239
Rhineland	2,515	2,415½
Richland Center	1,157	1,367
Sauk City	978	1,667
Sharon	333	302
Sheboygan	7,104	7,505
Stevens Point	4,329	3,771
Tomah	2,742	3,807
Viroqua	1,539	2,086½
Watertown	4,345	5,040
Waukesha	4,130	4,676
Wausau	2,450	2,782
Wauzeka	1,932	2,073
West Bend	1,867	1,519
West Superior	5,961	6,582½
Wonewoc	3,715	4,414
Ripon		930
Evansville		751
Totals	256,160	265,793

Owing to the new law changing the date for the distribution of the surplus fund from May 1st to October 1st, the following table covers seventeen months, from May 1st, 1896, to October 1, 1897:

DISTRIBUTION OF THE SURPLUS FUND, 1897.

TABLE NO. 3.

Showing the number of barrels inspected in small lots (less than ten barrels), the total number of barrels inspected (exclusive of the Milwaukee district) and the amount paid to each inspector from the surplus fund for the seventeen months ending September 30th, 1897.

Districts.	Total inspections.	Small lots.	Allowance on small lots.	Allowance pro rata	Total allowance
Antigo, F. W. Kiefer.....	2,111	25	\$4 25	\$23 48	\$27 73
Antigo, A. P. Church.....	469	14	2 38	5 22	7 60
Appleton, Dan Breen.....	8,478	46	7 82	94 32	102 14
Ashland, M. J. Hart.....	6,916	5	85	76 95	77 80
Beaver Dam, W. D. Chandler	2,701	16	2 72	30 05	32 77
Beloit, E. G. Smith.....	3,013	16	2 72	33 52	36 24
Benton, W. H. Nehls.....	1,744	1	17	19 40	19 57
Black River Falls, Nick Gruber	1,118			12 43	12 43
Burlington, Jos. Miller....	3,606	3	51	40 12	40 63
Chetek, Fred Hanson.....	2,407	1	17	26 77	26 94

Distribution of Surplus Fund.

TABLE NO. 3—Continued.

Districts.	Total inspections.	Small lots.	Allowance on small lots.	Allowance pro rata.	Total allowance.
Chippewa Falls, W. H.					
Howieson	4,320			48 06	48 06
Chilton, F. D. Breed	1,019			11 33	11 33
Chilton, A. K. Breed	316			3 52	3 52
Delavan, F. Lindemann	2,567	33	5 61	28 55	34 16
Durand, Walter Schur	943	15	2 55	10 50	13 05
Eau Claire, W. R. Scott	4,127	15	2 55	45 92	48 47
Fond du Lac, R. F. Sex-					
mith	4,942	81	13 77	54 97	68 74
Florence, S. T. Beattie	310	78	13 26	3 45	16 71
Grantsburg, A. M. Ander-					
son	455	73	12 41	5 06	17 47
Green Bay, J. H. Leonard	12,775	31	5 27	142 12	147 39
Hudson, R. Dinsmore	7,468	615	104 55	83 10	187 65
Hurley, G. Thomas	1,227			13 65	13 65
Hurley, C. Reible	340			3 78	3 78
Kenosha, J. A. Jackson	3,233	37	6 29	35 96	42 25
La Crosse, E. W. Cham-					
berlain	9,232	169	28 73	102 68	131 41
Lake Geneva, J. E. Nether-					
cut	1,640			18 25	18 25
Madison, R. J. McConnell	10,235	8	1 36	113 86	115 22
Manitowoc, R. Maguire	4,170	12	2 04	46 43	48 47
Marinette, J. J. Andrew	2,842	21	3 57	31 63	35 20
Marshfield, C. H. Doern	5,169	5	85	57 50	58 35
Merrillan, G. R. Francis	885			9 85	9 85
Merrill, D. E. Dean	2,540	17	2 89	28 25	31 14
Milton Jct., K. W. Tanner	6,566	27	4 59	73 05	77 64
Monroe, B. T. Raymond	3,463	15	2 55	38 53	41 08
Montello, Wm. O'Brien	1,464			16 28	16 28
Montello, C. R. Roskie	415			4 62	4 62
Menomonie, W. A. Scanlan	1,440	5	85	16 03	16 88
Necedah, G. M. Huckins	456½			5 07	5 07
Nemah, C. W. Johnson	3,776	6	1 02	42 00	43 02
Neillsville, E. M. Wheaton	1,362			15 15	15 15
Oconto, C. J. Francis	3,517			39 12	39 12
Oscola, A. A. Heald	1,057			11 75	11 75
Oshkosh, W. H. Boyd	11,531	5	85	128 28	129 13
Phillips, M. Christianson	1,498½			16 66	16 66
Platteville, J. Fawcett	6,604	1	17	73 46	73 63
Portage, Chas. Mohr, Jr.	3,892	7	1 19	43 30	44 41
Racine, C. F. Brewer	8,297	2	34	92 30	92 64
Rhineland, F. C. Ulrich	3,176			35 33	35 33
Richland Center, A. S. Rip-					
ley	945			10 52	10 52
Sharon, J. B. Stupfell	436	165	28 05	4 85	32 90
Sheboygan, Geo. Sullivan	9,030	226	38 42	100 45	138 87
Stevens Point, A. J. Booth	4,139	11	1 87	46 05	47 92
Tomah, C. J. Wells	3,589	1	17	39 92	40 09
Viroqua, J. Omundson	2,004½			22 30	22 30
Watertown, H. Wert-					
heimer	5,683	8	1 36	63 23	64 59
Waukesha, T. H. Taylor	5,104½	13	2 21	56 82	59 03
Wausau, Ed. Heilmann	3,024	16	2 72	33 65	36 37
Wauzeka, O. P. Vaughan	2,375			26 43	26 43
West Bend, W. C. Bratz	2,111			23 48	23 48
West Superior, John Diffor	7,847½	6	1 02	87 30	88 32
Wenewoc, J. De Garmo	4,978	28	4 76	55 38	60,14
Sauk City, J. C. Meyer	978½			10 88	10 88
Fond du Lac, G. H. Ferris	4,010	6	1 02	44 62	45 64
Eau Claire, G. W. Williams	2,480			27 60	27 60
Richland Center, Lee Mc-					
Murtrey	488			5 43	5 43
Marinette, W. J. Suelhofn	1,495	43	7 31	16 63	23 94
Malden Rock, C. L. News-					
trom	64	5	85	72	1 57
Totals	232,618	1,933	\$328 61	\$2,587 87	\$2,916 48

Distribution of Surplus Fund.

DISTRIBUTION OF THE SURPLUS FUND, 1898.

TABLE NO. 4.

Showing the number of barrels inspected in small lots (less than ten barrels). The total number of barrels inspected, (exclusive of the Milwaukee district) and the amount paid to each inspector from the surplus fund for the year ending September 30th, 1898.

Districts.	Total inspections	Small lots.	Allowance on small lots.	Allowance pro rata.	Total allowance
Antigo, A. P. Church.....	2,249	47	\$7 99	\$24 85	\$32 84
Appleton, Dan Breen	5,583	81	13 77	61 69	75 46
Ashland, M. J. Hart.....	6,355	77	13 09	70 23	83 32
Beaver Dam, W. D. Chandler	964	4	68	10 65	11 33
Beaver Dam, H. J. Hughes	658	1	17	7 27	7 44
Beloit, Prof. E. G. Smith.	2,402	29	4 93	26 54	31 47
Benton, W. H. Nehls.....	1,248	6	1 02	13 79	14 81
Black River Falls, N. Gruber	711			7 85	7 85
Burlington, Jos. Miller...	3,485			38 50	38 50
Chetek, Fred Hanson	2,606			28 79	28 79
Chilton, A. K. Breed.....	1,756			19 40	19 40
Chippewa Falls, W. H. Howieson	3,314			36 61	36 61
Delavan, F. Lindemann ..	2,832	3	51	31 29	31 80
Durand, W. Schur	533			5 89	5 89
Durand, H. M. Orlady	123			1 35	1 35
Eau Claire, G. W. Williams	4,926	6	1 02	54 43	55 45
Evansville, S. S. Lee.....	751			8 29	8 29
Florence, S. T. Beattie ..	372	207	35 19	4 11	39 30
Fond du Lac, G. H. Ferris	7,067	150	25 50	78 09	103 60
Grantsburg, A. M. Anderson	446			4 92	4 92
Green Bay, J. H. Leonard	9,191			101 58	101 58
Hudson, Robt. Dinsmore.	5,974	213	36 21	66 01	102 22
Hurley, C. Reible	1,093			12 17	12 17
Kenosha, J. A. Jackson....	2,669	66	11 22	29 53	40 75
La Crosse, E. W. Chamberlain	3,212	20	3 40	35 50	38 90
La Crosse, E. H. Chamberlain	2,700	17	2 89	29 83	32 72
La Crosse, Wm. H. Luth..	2,314	25	4 25	25 56	29 81
Lake Geneva, J. E. Nethercut	887	10	1 70	9 86	11 56
Madison, R. J. McConnell	7,291	2	34	80 56	80 90
Maiden Rock, C. L. Newstrom	778			8 59	8 59
Manitowoc, R. Maguire....	4,002	17	2 89	44 22	47 11
Marquette, W. J. Snelfohn	3,625	142	24 14	40 06	64 20
Marshfield, C. H. Doern ..	4,438	8	1 36	49 03	50 39
Menomonie, W. A. Scanlan	1,012			11 18	11 18
Merrill, D. E. Dean	1,645	3	51	18 17	18 68
Merrill, C. S. Stimers	558	7	1 19	6 17	7 36
Merrillan, G. R. Francis..	1,090			12 04	12 04
Milton Jct., K. W. Tanner	5,313	9	1 53	58 70	60 23
Monroe, B. T. Raymond...	4,396			48 57	48 57
Montello, C. R. Roskie....	1,702			18 80	18 80
Necedah, G. N. Huckins...	560	8	1 36	6 20	7 56
Neenah, C. W. Johnson....	3,611	11	1 87	39 90	41 77
Neillsville, E. M. Wheaton	744			8 25	8 25
Oconto, C. J. Francis.....	3,089			34 15	34 15
Osceola, A. A. Heald.....	781			8 63	8 63
Oshkosh, W. H. Boyd.....	8,827	1	17	97 58	97 75

Distribution of Surplus Fund.

TABLE NO. 4—Continued.

Districts.	Total inspections.	Small lots.	Allowance on small lots.	Allowance pro rata.	Total allowance.
Phillips, M. Christianson..	1,099			12 14	12 14
Platteville, J. Fawcett.....	4,321			47 74	47 74
Portage, Chas. Mohr, Jr....	4,278			47 27	47 27
Racine, C. F. Brewer.....	7,239	6	1 02	80 08	81 10
Rhineland, F. C. Ulrich.....	1,786			19 74	19 74
Rhineland, M. W. Shafer.....	629			6 95	6 95
Richland Center, L. Mc-					
Murtrey	1,365	2	34	15 10	15 44
Ripon, C. W. Stewart	930			10 27	10 27
Sauk City, J. C. Meyer.....	1,667			18 44	18 44
Sharon, J. B. Stupfell.....	302	250	42 50	3 32	45 82
Sheboygan, Geo. Sullivan.....	7,505	5	85	82 93	83 78
Stevens Point, A. J. Booth.....	2,641	7	1 19	29 18	30 37
Stevens Point, T. L. Mc-					
Glachlin	1,130	11	1 87	12 48	14 35
Tomah, C. J. Wells.....	3,807	9	1 53	42 06	43 59
Viroqua, J. Omundson.....	2,086			23 05	23 05
Watertown, H. Wert-					
neimer	5,040			55 69	55 69
Waukesha, T. H. Taylor	4,676			51 66	51 66
Wausau, Ed Heimaun	2,782	32	5 44	30 76	36 20
Wauzeka, O. P. Vaughan.....	2,073			22 90	22 90
West Bend, W. C. Bratz.....	1,519			16 87	16 87
West Superior, J. Diffor.....	6,582	7	1 19	72 73	73 92
Wonewoc, J. DeGarmo	4,414	16	2 72	48 77	51 49
Totals	197,755	1,515	\$257 55	\$2,185 49	\$2,443 04

CIRCULAR NO. 6.

Directions for Testing and Branding Oil.

Your attention is called to the fact that the law has recently been changed, and as now in force differs in several important particulars from the old act.

A copy of the new law will be found appended to this circular, and you are directed to carefully study the same, making yourself thoroughly familiar with all of its provisions.

The legal test for oils used for illuminating or heating purposes in Wisconsin is now fixed at 100 degrees flash, and 120 degrees burning, thereby requiring a double test, and the oil must come up to both requirements.

In order to secure uniformity in results, all deputy inspectors

Directions for Testing and Branding Oils.

will be required to carefully comply with the following directions in making the test.

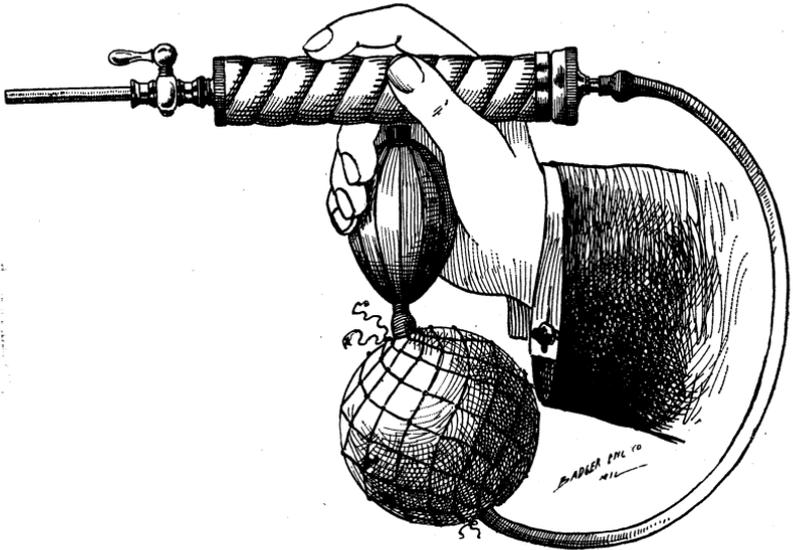
All tests should be made in a closed room, well away from drafts. Smoking or blowing in the direction of the oil under test must be carefully avoided.

Fill the water bath of your Tagliabue tester about three-fourths full of water, leaving a small space for expansion of the heated water; this water should be of a temperature not exceeding 70 degrees. Then fill your glass oil cup with the oil to be tested to within about one-fourth of an inch of the top. Wipe the edges of the oil cup dry, removing any air bubbles from the surface of the oil with a small piece of blotting paper. The brass lamp should be filled with alcohol. After lighting the same place it under the water bath. Set the tester within the black enameled box, suspending the thermometer by a rubber band after passing through the hole in the black box. Arrange the thermometer so that the bulb is well immersed in the oil, observe the temperature as it begins to rise. Do not allow the oil in the cup to heat faster than three degrees per minute up to 100 degrees, nor faster than two degrees per minute over 100 degrees. When the temperature of the oil has reached 100 degrees, regulate the flame of the lamp with the utmost nicety in such a manner that the temperature of the oil rises as nearly as practicable two degrees a minute by actual observation, with the watch in hand. When the oil has reached 90 degrees, apply your torch, watching carefully for the first flash, and repeat the same every two degrees until the burning point is reached.

In using the Wisconsin Gas Torch please observe the following directions: After unpacking the same, screw on the tip with the valve attached to the reservoir, then unscrew the top cap upon which is stencilled "Tanner's Wisconsin Gas Torch," pour into the reservoir not to exceed one-half teaspoonful of *gasoline*. This will immediately be absorbed, when the cap should be replaced. The reservoir is now charged ready for use. It will work continually as long as enough vapor remains to

Directions for Testing and Branding Oils.

burn. Now slip on the double rubber bulb, press the rubber bulb a few times until the second bulb fills the net. Open the valve at the other end and place the tip near a flame (a lighted match or the burning alcohol lamp). If the valve is open too far the pressure will extinguish the flame. Regulate the flame by the stopcock, drawing it down to one-fourth of an inch in length or size. In using the torch while testing hold it as shown in the accompanying illustration.



Tanner's Wisconsin Gas Torch.

In case the flame does not work well, it will be found to be due to leaking of the gas, and a fresh leather packing will be needed in the cap.

Oil affects rubber injuriously, so it will be well to keep the rubber bulbs away from direct contact with the oil as far as possible. In case the rubber bulbs break they can often be repaired with bicycle cement. In case of emergency each instrument is furnished with an extra rubber tube, one end of which can be slipped over the cap and with the other end in the mouth you

Directions for Testing and Branding Oils.

can blow the gas through the cylinder. If you do not wish to blow continuously, if one strong puff is followed by pinching the rubber tube with the fingers, pressure enough will have been supplied to keep the flame going for several seconds; long enough in fact to test the presence of inflammable vapor over the surface of the oil in the cup. After preparing the instrument, pass the lighted torch over the surface of the oil in the cup as near as possible without touching the oil. The flame should not be thrust against the surface of the oil. Pass the lighted torch over the surface of the oil in this manner every two degrees until the burning point is reached; do this with a moderately quick but steady movement of the hand.

The first blue glimmer you get is the flashing point, and is usually about 20 degrees below the burning point. Oil that flashes below 100 degrees must be rejected. The burning point is reached when on applying the torch the oil in the cup burns all over its surface, so that it has to be blown out. Oil that burns below 120 degrees must be rejected. A careful record must be kept of the flashing point as well as the burning point.

Sufficient time should be given every test to insure accuracy, usually from forty to sixty minutes to every test. When making several successive tests always renew the water in the water bath, and see that the tester is well cooled off and perfectly clean before proceeding with the next test.

If the oil flashes or burns within a degree or so of the legal test, or if there is the least doubt about the accuracy of the test, it should be repeated to verify the result.

Bearing in mind that the Wisconsin test of 100 degrees flash and 120 degrees burning, is a lower test than is required by any of the bordering states, consequently especial care is enjoined that the oil companies do not introduce oil in this state that could not be sold in neighboring states.

Oil that is used for illuminating cars on railroads and steamboats must bear a burning test of 300 degrees. In testing 300 degree Mineral Seal oil the water bath should be filled with sand in place of water, and the glass cup replaced by a brass cup.

Directions for Testing and Branding Oils.

In all tank car inspections a record must be kept of the *name* of the *tank car line*, the *number* of the *tank car* and the *number of gallons* contained in the car. Enter all of this in the stub of the receipt book, in addition to the other memoranda therein required. In case you wish to estimate gallons by weight, figure six and four-tenths pounds per gallon.

Always obtain a sample of the oil from the tank car before it is unloaded. The railroad companies allow forty-eight hours for unloading before making any demurrage charge. If by reason of any neglect of the inspector such charge is made he will be expected to make the same good to the oil company.

Fill out and deliver to the consignee a "certificate of oil inspection" for every grade of oil tested. Also fill out and give to the party who pays you a receipt for the money paid. Where oil is actually inspected in any one day in less than ten barrel lots, a record must be kept of this and entered in your monthly report, so that the proper distribution of the surplus fund can be made. All deputies are required to send in a report on the first day of the month, upon blanks furnished, whether any oil has been inspected during the month or not.

Stencil plates, testers and other necessary paraphernalia will be furnished from the office of the supervisor of oils at cost to the deputies; none other must be used. All printed matter is furnished to the deputies free of cost.

You are required by law to immediately furnish this office with full information regarding any accident or explosion that may come to your knowledge from the use of illuminating or heating oils. Proper blanks will be furnished upon which to make any such report.

The fees allowed by law are collectible upon approval or rejection of each consignment of oil inspected. Ten cents per barrel is to be collected for every cask, package or barrel estimated at not to exceed fifty gallons or major fraction thereof. Eight cents of this is retained by the deputy inspector and two cents per barrel is to be remitted to the office of the supervisor with the monthly report.

Directions for Testing and Branding Oils.

The state supervisor enjoins upon each inspector a personal supervision of all of the work relative to his office, and expects all violations of the law will be promptly reported to the district attorney of the county in which it takes place, and the facts reported to this office.

Directions for Branding Barrels.

- Oil flashing below 100 degrees must be branded "Rejected."
- Oil burning below 120 degrees must be branded "Rejected."
- Oil burning at 120 and up to 125 should be branded "Approved." 120.
- Oil burning above 125 and up to 135 should be branded "Approved." 130.
- Oil burning above 135 and up to 145 should be branded "Approved." 140.
- Oil burning above 145 and up to 155 should be branded "Approved." 150.
- Oil burning above 155 and up to 165 should be branded "Approved." 160.
- Oil burning above 165 and up to 180 may be branded "Approved." 175.
- Oil burning above this shall be branded at the burning point.

The brand impression will be ordinarily placed on the gauge end of the barrel; but when other marks interfere, then wherever practicable, but always so well done that a legible imprint remains.

Deputy inspectors will under no circumstances allow their brands to be used by others, but will brand the barrels themselves, or have the same done under their personal supervision.

The sale or disposal of in any manner of any empty casks or barrels without first thoroughly cancelling the Wisconsin inspectors' brand will, on conviction, subject the owner to a fine not to exceed \$500.00.

Directions for Testing and Branding Oils.

Every barrel of oil sold or used in this state must be tested and branded by a Wisconsin deputy inspector. Inspection in other states counts for nothing.

For all points not covered by these instructions the deputy inspectors will carefully examine and strictly construe the law, keeping in mind the rule to be prompt in answering calls, and courteous in dealing with the public. Also you are directed to positively abstain from making any remarks about the quality of the oil inspected for the various competing oil companies. The duty of an inspector ends in this respect when he has ascertained that the oil stands the required legal test.

In conclusion, I desire to impress upon the deputies an appreciation of the responsibilities resting upon them officially. Trusts are committed to them which should never be lost sight of. Human lives, as well as the safety of property, may depend upon the issue of an inspection.

The law must be enforced impartially and honestly, without fear or favor.

KEROSENE ACCIDENTS.

The higher the state of civilization the more safeguards are thrown around human life. But as a result of this high state of culture and progress, and through the modern appliances used to facilitate business and pleasure, man is exposed to dangers both to life and property which were unknown before. And as public officials, it is our duty to warn the public when they use the common appliances of daily life in a careless and dangerous manner.

As long as horses are used they will occasionally run away. In spite of automatic signals, switches and brakes, collisions on the railroad will occur. The deadly trolley and live electric light wire will occasionally drop on the innocent victim's head. The ignorant guest will frequently blow out the gas, and glass kerosene lamps will continue to tumble from shelves and brackets and break. Too often in the hurry to get a quick meal,

Kerosene Accidents.

kerosene will be poured from a can upon the fire, followed frequently by serious, if not fatal, consequences to the rash user.

Accidents from the use of kerosene for the past two years have been comparatively rare. Ten years ago the state inspector reported 48 accidents from the use of petroleum products. During the period covered by this report 23 have been reported to this office. This reduction in number, coupled with the fact that the consumption of oil has a little more than doubled during this time, indicates that the consumer is being supplied with a grade of oil that is not dangerous, and the general increase of knowledge in the use of illuminating oils has lead the people to use greater care in handling the same.

Some accidents are unavoidable; many are due to criminal carelessness, and are preventable; a few are inexplicable.

Quoting from the reports of my deputies, among those unavoidable, the following are good examples: Mr. Fred Kuth of Milwaukee says, "Mrs. W—, with a lamp in her hand, went to a closet to get out a dress. As she opened the door a rat jumped toward her. This frightened her so that she let the glass lamp drop, which broke; the oil took fire and the building was damaged to the extent of \$300.00. Oil tested from the can showed that it was 130 test oil, which was ten degrees above the legal requirements."

Another reported by Inspector Fawcett at Platteville: "Mr. D— just finished filling several lamps. After lighting them to try the wicks he accidentally brushed one off the shelf, which dropped to the floor, breaking, and the scattered oil set fire to the room, damaging the property to the extent of \$200.00. Oil tested 136."

One of the fatal accidents, and a sad case too, for it was entirely unnecessary and preventable, was reported by Inspector Boyd at Oshkosh. "Mrs. Morse, who was an invalid, arose from bed and attempted to start a fire in the kitchen stove by pouring oil out of a kerosene can. The oil ignited suddenly, and in a moment her light night robe was a mass of flames. The

Kerosene Accidents.

burns were so severe that she died in a few hours. Oil tested 140."

Another case, reported by Inspector McMurtrey at Richland Center, had all of the possibilities of a fatal termination, but happily the parties escaped with slight burns. "Mr. S—, working in a slaughter house killing hogs, wishing to heat the water more rapidly, poured oil from a jug on the fire in a brick arch. The oil put out the fire, filling the room with gas. On striking a match to light the fire the gas exploded, setting fire to his clothes, but as they were damp, did only slight damage to his hands and face."

Some accidents cannot be satisfactorily explained. An accident of this kind was reported by Inspector McConnell at Madison. The accident resulted in the loss of two lives, Mrs. Olson and her babe. The testimony at the coroner's inquest showed that she was alone in her room with the baby; that she was running a sewing machine with a lighted lamp placed on the machine, while the baby was playing on the floor near by, when in some manner unknown the blazing oil was scattered about the floor, setting fire to her clothes, as well as the child. Before the neighbors who were attracted by her screams could put out the fire they were so badly burned that they both died. The verdict of the jury was that the lamp exploded. It seems as reasonable to believe that the vibrations of the running sewing machine caused the lamp to work off the leaf and fall to the floor, breaking and scattering the oil about.

In view of the serious injuries, loss of property and occasional fatalities, it behooves the public to use ordinary care in the use of illuminating oils, and I deem it proper and desirable to make the following suggestions along this line.

In the first place, kerosene should never be poured out of a can to start a fire; paper and pine kindling wood is cheaper and immensely less dangerous. Every lamp should be emptied completely and washed out with boiling hot water at least every two weeks, also the wicks, and both perfectly dried, as a great many

Kerosene Accidents.

quarts of oil are carried through the wick. In case the lamp chamber is not kept clean, particles of dust and dirt will fill the pores of the fabric, thereby preventing a free flow of oil. Therefore, it is well to select wicks that are loosely woven, free from sizing or any foreign substance, and then they should move easily in the tube and still be of proper thickness to supply a sufficient quantity of oil to the flame to give the required light.

The wick should be trimmed every day by cutting it evenly across the top; scraping it off injures the wick and fills the burner with dirt and oil that may take fire, and will at least cause a bad odor. Keep the burner clean and the air passages unobstructed; if they become clogged, boil the entire burner in soda water. When lighting the lamp do not turn it up full height at once, but wait a few moments for the wick to lift the oil and warm the chimney.

Most of the accidents from the use of kerosene in lamps are due to the lamps falling from their fastenings, or tipping over. More care with the fastenings and hanging and bracket lamps will materially reduce the number of accidents. Before blowing a lamp out the wick should always be turned down just a little below the top of the tube, a smaller flame will then be there to extinguish, and the heat at the end of the wick will not cause the oil to creep over the end of the tube.

With proper care and the exercise of ordinary common sense no danger need accrue from the use of oil for illuminating or heating purposes of the grade legally required in this state.

Law Providing for Inspection of Oils.

CHAPTER 114.

AN ACT TO PROVIDE FOR THE INSPECTION OF ILLUMINATING OILS OR PETROLEUM, AND PETROLEUM PRODUCTS FOR USE IN THE STATE OF WISCONSIN, AND TO REPEAL CHAPTER 269 OF THE LAWS OF 1880, AS AMENDED BY CHAPTER 288 OF THE LAWS OF 1881, AND CHAPTER 158 OF THE LAWS OF 1883, AND CHAPTER 440 OF THE LAWS OF 1889.

The people of the state of Wisconsin, represented in senate and assembly, do enact as follows:

Section 1. The governor shall, by and with the advice and consent of the senate, appoint a suitable person, who shall be a resident of this state, and not pecuniarily interested, either directly or indirectly, in the manufacture, refining, sale or vending of illuminating oils from petroleum or other sources or material, as state supervisor of oils, whose term of office shall be for the term of two years from the first day of April in the year of his appointment, or until his successor shall have been duly appointed and qualified. The governor shall have the power to remove such person from office and may fill any vacancy arising from such removal or from resignation, death or other cause, by an appointment to fill the vacancy for the unexpired portion of the term.

Section 2. The person appointed as state supervisor of oils shall, before he enters upon the duties of his office, take the oath or affirmation prescribed by the laws of the state, and shall execute a bond to the state of Wisconsin in the sum of five thousand dollars, with such sureties as shall be approved by the secretary of state, conditioned for the faithful performance of his duties under this act, which bond, so approved, shall be filed with the secretary of state.

Section 3. It shall be the duty of the said state supervisor of oils to oversee all deputy inspectors of illuminating oils in this state, to instruct them in the performance of the duties of their office, keep a record of the deputy inspectors' reports to him, and to make a biennial report to the governor on the first day of October, as prescribed by law. He shall prepare or cause to be prepared, suitable and uniform designs for brands or stencil plates, to be used under the provisions of this act, and he may furnish such brands or stencil plates and testers too all deputy inspectors of oils at their proper cost and expense, and he shall make such other rules and regulations for the guidance of the

Law Providing for Inspection of Oils.

deputy inspectors, not inconsistent with the provisions of this act. The state supervisor of oils shall be, and hereby is empowered to appoint such deputy inspectors throughout this state as shall be necessary for the prompt and faithful performance of the duties required under this act.

Section 4. Every deputy inspector appointed under the provisions of this act shall, before entering upon the duties of his office, take an oath or affirmation faithfully to discharge the duties of the same as prescribed by the laws of the state, and shall execute a bond to the people of this state in a sum not exceeding five thousand dollars, and not less than five hundred dollars, as may be fixed in each case by the state supervisor of oils, conditioned as aforesaid; such bond to be filed in the office of the clerk of the county wherein the deputy inspector executing the same shall reside, and the duplicate copy of the same duly certified by the county clerk, shall be filed in the office of the state supervisor of oils; all bonds executed under the provisions of this act shall be for the use of all persons aggrieved by the acts or neglect of the state supervisor of oils, or of the deputy inspectors respectively executing the same. The sureties on the bonds of the deputy inspectors shall be approved by the judge of probate in the counties in which the deputy inspectors executing the same shall respectively reside. Every deputy inspector appointed by the state supervisor of oil shall examine and test all oils offered for sale or for use for illuminating or heating purposes by any person whatsoever in this state, the same having been offered for sale or use in the district assigned the deputy inspector, and not having been previously tested and branded by a Wisconsin deputy inspector. He shall on the first day of each month report to the state supervisor of oils a full statement of the number of barrels of oil inspected, the result of such inspection, and an account of the actual receipts of his office, and he shall at the same time remit the sum of two cents for each barrel of oil he has tested during the preceding month, which payment shall be the salary of the supervisor of oils, and no other allowance shall be made for the expenses of his office. Every deputy inspector shall faithfully comply with all instructions issued by the state supervisor of oils, and shall furnish to him full information regarding any accident or explosion that may come to his knowledge from the use of illuminating or heating oils. The deputy inspectors are hereby empowered to demand and receive fees for and payment of such examining and testing as hereinafter provided, and all deputy inspectors shall be liable to all the penalties hereinafter provided for any neglect,

Law Providing for Inspection of Oils.

or for any willful misconduct or malfeasance in the discharge of the duties of the office. The state supervisor of oils shall have power at any time to remove any deputy inspector so appointed upon reasonable notice for reasonable cause.

Section 5. All mineral or petroleum oil, or any oil or fluid substance, which is a product of petroleum or into which any product of petroleum enters or is found, as a constituent element whether manufactured within this state or not, shall be inspected as provided in this act, before being offered for sale or sold for consumption or used for illuminating or combustive purposes within this state; provided, however, that the gas or vapor from said oils may be used for illuminating purposes without inspection when the oils from which said gas or vapor is generated, are contained in closed reservoirs outside the building illuminated or lighted by said gas; provided further, that nothing in this act shall be so construed as to prevent the use in the streets or other open air lamps, in stoves for heating purposes of the lighter products of petroleum, such as gasoline, benzine, benzole or naphtha. Any person who shall either personally or by any clerk or agent, sell or offer for sale or for use, or who shall, in any manner dispose of or attempt to dispose of any oil for illuminating or heating purposes which shall not have been examined or tested under the provisions of this act, or which having been so tested, shall have been marked as rejected, or who shall knowingly use or furnish for use for illuminating or heating purposes any oil, which shall not have been properly examined or tested as herein provided, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be liable to a penalty of not less than five dollars nor more than five hundred dollars, and any person so offending against the provisions of this act shall be responsible in damages to the party injured, in the event of injury arising or growing out of the use of any oil, so offered or provided for sale or for use. Any person who shall willfully adulterate any illuminating or heating oil by adding thereto benzine, naphtha, paraffine oil or any substance or thing whatever, shall be guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than fifty dollars nor more than five hundred dollars, or by imprisonment in the county jail for a term not exceeding six months. Any person who shall falsely brand or mark any cask, barrel or other package of oil, or who shall either personally or by agent or servant, cause the changing, altering or defacing in any manner any brand or mark or device affixed to any cask or barrel or other package of oil by any deputy inspector duly appointed under the provisions of this,

Law Providing for Inspection of Oils.

or who shall refill and use any cask, barrel or other package having an inspector's mark or brand thereon without obliterating the inspector's brand and having the oil in such cask, barrel or other package properly examined or tested under the provisions of this act, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be liable to a penalty of not less than five dollars nor more than five hundred dollars, or to imprisonment in the county jail for a period of not more than six months, or to both such fine or imprisonment in the discretion of the court, and any person who shall sell or in any way dispose of any empty cask, barrel or other package bearing an inspector's brand without first thoroughly cancelling, defacing or removing such brand, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be liable to a penalty of not less than five dollars nor more than five hundred dollars, or to imprisonment in the county jail for a term not exceeding six months, or to both such fine and imprisonment in the discretion of the court.

Section 6. No person shall knowingly sell or offer for sale, or knowingly use any coal or kerosene oil, or any product of petroleum for illuminating or heating purposes, which by reason of being adulterated or for any other reason will emit a combustible vapor at a temperature less than one hundred degrees above the zero point of Fahrenheit's thermometer, open test, where tested as provided in section 9, or will burn freely at a temperature less than one hundred and twenty degrees above the zero point of Fahrenheit's thermometer, open test, where tested as provided in section 9. No kerosene oil or fluid, whether composed wholly or in part of petroleum or its products, which will ignite and burn at a temperature of less than three hundred degrees of Fahrenheit's thermometer, open test, shall be burned in any lamp or vessel or used for illuminating purposes in any passenger, baggage, mail or express car, on any railroad or steamboat, in which passengers are carried within this state, nor shall the same be carried as freight in any passenger, baggage, mail or express car on any railroad within this state. Any violations of the provisions of this section shall be deemed a misdemeanor, and the offender shall on conviction thereof be fined not less than one hundred dollars nor more than one thousand dollars, and shall be liable for all damages resulting therefrom. Any oil which shall fail to stand the test above described shall be deemed unfit for illuminating or heating purposes, and the barrel, cask, tank or other package containing the same shall be marked "rejected," as hereinafter provided.

Section 7. It shall be the duty of every deputy inspector appointed

Law Providing for Inspection of Oils.

under the provisions of this act to provide at his own cost and expense, all the necessary instruments and apparatus for examining, testing and branding illuminating oils under the provisions of this act, and it shall be his duty to promptly examine and test, when called upon for that purpose, any oils offered for sale or for use for illuminating or heating purposes, and if upon examination or test such oil shall be found to meet the requirements of this act, he shall affix to the package, cask or barrel containing the same, a brand or stencil containing the word "approved," with the name of the district and day of testing over his official signature upon the cask or barrel containing the same, and shall issue to the person for whom inspected a certificate of inspection and approval reciting the number of barrels, or in case of a tank car, the name of the tank car line with the number of said car, with the number of barrels contained, the commercial name of the oil with the test found and date of the inspection, and it shall be lawful for any person to sell the same as an illuminating or heating oil within this state. But if the oil so tested shall not meet the requirements specified in this act he shall mark in plain letters by stencil or brand the words "rejected for illuminating purposes," with the date of testing, name of the district and his official signature, and issue the certificate of inspection as aforesaid, and it shall be unlawful for the owner thereof or any other person to sell such oil for illuminating or heating purposes within the state of Wisconsin. Said brand or stencil for the approval of oils shall further contain such numerals indicating the degree of such oils test, as the state supervisor of oils may direct, and if any person shall sell or offer for sale any such rejected oil he shall be deemed guilty of a misdemeanor and shall upon conviction thereof be punished by a fine of not less than one hundred dollars nor more than one thousand dollars, or by imprisonment in the county jail not more than six months, or by both fine and imprisonment, at the discretion of the court.

Section 8. And to more effectually carry out the provisions of this act it shall be lawful for any deputy inspector to enter into or upon the premises of any manufacturer, refiner or vendor of such illuminating oils, and if he shall find or discover upon said premises any oil which shall not have been examined or tested, and properly marked or branded under the provisions of this act, he shall at once proceed to test, and thereafter properly mark, stencil or brand the same, as herein provided.

Section 9. In all tests of illuminating oils made under this act the tester, known as the Tagliabue open cup or commercial tester shall be

Law Providing for Inspection of Oils.

used; the oil cup shall be filled to within one-fourth of an inch of the top thereof or as nearly full as is practicable to fill it without causing the oil to overflow in making the test, and in using the tester, the oil shall not be heated faster than three degrees Fahrenheit per minute up to one hundred degrees, nor more than two degrees Fahrenheit per minute above one hundred degrees Fahrenheit. The taper used in making the test should be such as shall give a clear flame, as nearly uniform in size as is practicable. The state supervisor of oils shall give such instructions to the deputy inspectors as in his judgment shall be necessary to secure uniformity in the methods of making the test.

Section 10. Every person appointed as deputy inspector under the provisions of this act shall be entitled to demand and receive from the owner or other person for whom or at whose request he shall examine or test any oil or sample the sum of ten cents for every single cask, barrel, package or sample of oil he shall test, and the said fees for examining or testing shall constitute a lien on the oil so inspected. The deputy inspectors may inspect and test illuminating or heating oils in a tank or railroad tank car, so called, when standing upon a railroad track, and such oil shall not be transferred into warehouses or storage tanks or otherwise unloaded until so inspected; provided, however, if any such oils are not inspected within twenty-four hours after arriving at their destination it may be unloaded and the deputy inspector shall make his inspection after it is so unloaded, and when such oil has been so inspected, no other inspection shall be necessary, but the deputy inspector shall, when such oil is put in barrels, brand the said barrels without charge. When the amount contained in any such tank or tank car shall exceed fifty gallons, each fifty gallons shall constitute a barrel within the meaning of this act, and the fees for inspecting the same and branding the barrels shall for each fifty gallons be the same as prescribed in this act for each barrel, cask or package. The term cask, barrel, package or sample of oil as used in this act shall be held and taken to mean a quantity not exceeding that contained in an ordinary commercial barrel, estimated as capable of containing fifty gallons. When the total amount of fees received by any deputy inspector in any district in any one year dating from the first of October shall, after the payment of the state supervisor's fees, exceed the sum of two thousand dollars, all sums in excess thereof shall be paid into the hands of the state supervisor of oils, and the state supervisor of oils shall disburse the same to the deputy inspectors in the following manner: First, he shall pay each inspector appointed

Law Providing for Inspection of Oils.

under the provisions of this act a sum sufficient to increase his compensation to the sum of twenty-five cents upon each package, cask or barrel actually inspected by him, in lots of less than ten barrels, tested at any one time during said yearly term; provided, that if there be insufficient funds to pay such increase in full, then the same shall be paid pro rata, as herein provided in proportion to the number of barrels inspected. Second, any sum remaining in the hands of the state supervisor shall be paid pro rata to all inspectors appointed under the provisions of this act in proportion to the number of barrels by each inspected during said yearly term. Third, any sum then remaining shall be paid into the state treasury for the benefit of the general fund. The total compensation of any inspector shall not exceed three thousand dollars. The disbursements required in this section shall be made as soon as practicable after the close of the yearly term on October first.

Section 11. It shall be the duty of every deputy inspector appointed under the provisions of this act to keep a true and accurate record of all casks, barrels, tanks or other packages of oil examined or tested by him, which record shall state the time and place of inspection, the number of casks, barrels or other packages of oil then and there examined or tested, the name of the person for whom or at whose request such examination or test was made, the mark or brand affixed to the casks, barrels or other packages, together with any further facts that may seem to him worthy of record, or shall be required by the state supervisor of oils; such account to be open to examination to any person who may so desire. No inspector appointed under the provisions of this act shall, during his term of office, traffic either directly or indirectly in any oil used for illuminating purposes, or be interested in any manner whatever in the manufacture, refining or sale of such oil, and any inspector violating the provisions of this section shall be removed from office immediately upon proof of such violation, and be liable to a penalty of not less than one hundred dollars nor more than five hundred dollars; provided, that the provisions of this section in regard to dealing in oil shall not apply to deputy inspectors, whose inspections during the term of one year shall not exceed fifteen hundred barrels.

Section 12. It shall be the duty of all inspectors appointed under the provisions of this act, who shall know of any violations of any part thereof, to notify the district attorney of the county in which the same shall occur, who shall make complaint before any court of competent jurisdiction, and it shall be the duty of all prosecuting attor-

Law Providing for Inspection of Oils.

neys to represent and prosecute on behalf of the people within their respective counties, all cases of offense arising under the provisions of this act or any section thereof. And any inspector who shall have knowledge of any violation of this act or any section thereof, and who shall fail to enter complaint against the person or persons so offending shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be liable to a penalty not exceeding fifty dollars and shall be removed from his office, and in case the death of any person or persons shall result from the explosion of a lamp or other vessel containing illuminating oil sold or used or furnished for use in violation of the provisions of this act or any section thereof, the person selling or furnishing such oil for use shall be deemed guilty of manslaughter in the third degree, and upon conviction thereof shall suffer the penalty in that case made and provided by the revised statutes of this state. All illuminating oil manufactured or refined in this state shall be inspected, examined and tested as herein provided before being removed from the premises of the manufacturer or refiner.

Section 13. Nothing contained in the provisions of this act shall be so construed as to prevent manufacturers, refiners or dealers in this state from keeping in their warehouses or tanks for reshipment to other states of illuminating oil of a grade below the test prescribed in this act. It is hereby declared to be the true intent and meaning of this act that the terms oils, illuminating oils, oils used for illuminating and heating purposes, and all similar words, terms and expressions used herein, shall be held to mean any mineral or petroleum oil or any fluid or substance which is the product of such oil or petroleum, or in which oil or fluid or substance so obtained shall be a constituent part by whatsoever name or title such oil, fluid or other substance may be known or called.

Section 14. Nothing contained in the provisions of this act shall be so construed as to apply to crude petroleum.

Section 15. All acts or parts of acts inconsistent with or contravening any of the provisions of this act are hereby repealed.

Section 16. This act shall take effect and be in force from and after its passage and publication.

Approved March 26, 1897.

(Published March 29, 1897.



SEVENTH BIENNIAL REPORT
OF THE
BOARD OF REGENTS
OF
NORMAL SCHOOLS
OF WISCONSIN

For the School Years 1896-7, 1897-8.



MADISON, WIS.:
DEMOCRAT PRINTING COMPANY, STATE PRINTER,
1898.

BOARD OF REGENTS OF NORMAL SCHOOLS.

1896—1897.

Regents Ex-Officio.

THE GOVERNOR OF THE STATE—WM. H. UPHAM.
THE STATE SUPERINTENDENT—JOHN Q. EMERY.

Regents Appointed.

W. A. BROWN,	T. JENKINS, JR.,	CHAS. PITTELKOW,
E. D. COE,	F. H. LORD,	JAS. O. RAYMOND,
J. J. FRUIT,	FRANK OSTRANDER,	A. E. THOMPSON.

1897—1898.

Regents Ex-Officio.

HIS EXCELLENCY—THE GOVERNOR—EDWARD SCOFIELD.
THE HONORABLE—THE STATE SUPERINTENDENT—JOHN Q. EMERY.

Regents Appointed.

J. J. FRUIT, LaCrosse, - - - - -	Term expires February 1, 1899.
J. JENKINS, JR., Platteville, - - - - -	Term expires February 1, 1899.
FREEMAN H. LORD, River Falls, - - - - -	Term expires February 1, 1899.
G. E. McDILL, Stevens Point, - - - - -	Term expires February 1, 1900.
CHAS. PITTELKOW, Milwaukee, - - - - -	Term expires February 1, 1900.
JAS. O. RAYMOND,* Stevens Point, - - - - -	Term expires February 1, 1900.
A. E. THOMPSON, Oshkosh, - - - - -	Term expires February 1, 1900.
W. A. BROWN, Marinette, - - - - -	Term expires February 1, 1901.
Z. P. BEACH, Whitewater, - - - - -	Term expires February 1, 1901.
F. A. ROSS, West Superior, - - - - -	Term expires February 1, 1901.

Officers of the Board.

PRESIDENT, A. E. THOMPSON,
VICE-PRESIDENT, J. J. FRUIT,
SECRETARY, S. S. ROCKWOOD,
TREASURER, SEWELL A. PETERSON.

* Deceased.

STANDING COMMITTEES.

- Executive*, - - .The PRESIDENT, Regents PITTELKOW and LORD.
Finance, - - - Regents McDILL, PITTELKOW and ROSS.
Graduating Classes, Regents EMERY, ROSS, SCOFIELD, FRUIT, JENKINS and
McDILL.
Teachers' Institutes, Regents EMERY, BEACH and BROWN.
Inspection, - - - Regents PITTELKOW, BEACH, LORD and the PRESIDENT.
Teachers, - - - Regents FRUIT, LORD and JENKINS.
Text-Books, - - - Regents BROWN, JENKINS and McDILL.

SCHOOLS IN OPERATION.

- | | |
|---------------------------|-----------------------------|
| Platteville, opened 1866. | River Falls, opened 1875. |
| Whitewater, opened 1868. | Milwaukee, opened 1885. |
| Oshkosh, opened 1871. | Stevens Point, opened 1894. |
| Superior, opened 1896. | |

**Regular Meetings first Wednesday in February and second Wednesday in July,
at 10 o'clock a. m., at the office of the Board, room 107, Capitol.**

PRESIDENT'S REPORT.

His Excellency, EDWARD SCOFIELD, Governor:

SIR: In accordance with law, I have the honor to submit the following report for the biennial period ending August 31, 1898.

The report of my predecessor trenching upon the period herein reported on sufficiently to announce the opening of the Seventh Normal School at Superior, September 8, 1896, and also to include a report of the President of said school bearing date of September 10, 1896. The expectations then entertained for the success of the school, have been more than realized, as shown by the statistics herein given, and by the accompanying report of the President. The opening of this school and the constantly increasing attendance at the others that produced a serious overcrowding, made it imperative for the Board to appeal to the Legislature for an increase of revenue for their use. Upon presentation of the matter to the Legislature of 1897, a statute was enacted authorizing the Commissioners of Public Lands to loan the Board, from the Normal School Fund, the sum of sixty thousand (60,000) dollars for the uses of the Income Fund, the said loan to be repaid and discharged in fixed installments. The one-fifth mill tax provided for by the Legislature of 1895, was increased by the addition of one-tenth of a mill, and the revisers in the Statutes of 1898 have consolidated these two provisions with the annual appropriation of ten thousand (10,000) dollars for the Fifth Normal School, thus providing for a single annual levy of nineteen-sixtieths of a mill tax upon the property of the State. This provision will enable the Board, by strict economy, to repay its loan as it falls due, maintain the schools on their present basis of running expenses and yearly add to the cash balance imperatively needed at the beginning of the school year to run the schools for the first five months

President's Report.

thereof without favors from the State Treasury. This, however, does not provide for any immediate increase in size, or equipment of any of the schools, some of which greatly need both to meet the pressing demands of their patrons.

On the evening of November 29, 1897, the building of the River Falls Normal School was burned, together with a large part of its valuable contents, the chief salvage being the boilers, engine and pumps, the records, the reference library, a part of the text-book library, and a part of the scientific apparatus.

An investigation by the Executive Committee upon the ground at once failed to locate blame while it showed that the fire originated in the chemical laboratory. Provision was at once made for continuing the school in several separate buildings fortunately located in the same block, being churches and public halls which were put at the service of the school, without cost to the State, by the generous action of the Common Council and the Societies of the place. By this prompt and highly commendable action the school was enabled to resume work with only the loss of a single half day by the Normal Classes and less than a week by the Model Department.

Provision was made by the Executive Committee for the adjustment of the loss and the collection of the insurance award, and in due time forty-four thousand eight hundred seventy dollars and twelve cents (\$44,870.12) was collected and paid into the Treasury to the credit of the Income Fund. In the meantime, to-wit: December 22, 1897, the full Board met in special session and determined to rebuild on the same ground, and at the semi-annual meeting following in February appropriated the total insurance collected for the purpose of rebuilding and equipping the school, and without exceeding said amount and the ordinary appropriations annually made to the school for miscellaneous purposes, the new building will be ready for occupancy and the school will be reopened on the sixth of September, 1898.

The loan above mentioned enabled the Board to enlarge the

President's Report.

Whitewater building at a cost of something over twenty-five thousand (25,000) dollars, purchase additional tracts of land adjoining the school grounds at Milwaukee and Stevens Point at a cost of eleven thousand eight hundred (11,800) dollars in the aggregate, and to place in the Platteville school building a new heating and ventilating plant, at a cost of about ten thousand (10,000) dollars, besides making many very much needed repairs on these and other buildings.

The buildings at Oshkosh, Stevens Point, Milwaukee and Platteville, are still overcrowded and some action is demanded for their relief which the Board can not take unaided by the Legislature and still pursue the financial policy adopted and followed during the past two years, referred to above, by which it means ultimately to place the affairs of the Normal School Trust on a basis approved by wise financiering, and adopted by the administration as the true rule in reference to all departments of state government. The present revenues of the Board come to its treasury mostly during the months of January, February and March, while the receipts from July to January are comparatively small and for these reasons there has been in the past a necessity to anticipate for the maintenance of the schools during the first half of the school year, the revenues to be collected during the last half. The Board has set itself the task of accumulating at the end of the school year in June, sufficient cash in the hands of its treasurer to run the seven schools during the first five months of the next school year without such favors from the State Treasurer. This it can not accomplish and at the same time grant the much needed relief so urgently requested by these several schools. By denying to the Oshkosh and Stevens Point Schools the improvements contemplated when the law of 1897 was passed and most rigid economy in all departments, the Board has made progress about half way toward this goal, and may confidently hope to reach it at the end of the next biennial period. Meanwhile it is evident the growth of the schools will be checked and the development of the system seriously impeded.

President's Report.

I. LIBRARIES.

For the success of these schools large libraries — practically two in each school, one of Text-books and the other of Reference Books — are an indispensable part of the equipment. These libraries are first established from funds of the Board, and afterwards the Text-book libraries in most of the schools are self-supporting by means of a small rental charged for use of the books, while the Reference libraries, being fee, depend upon appropriations from the Income Fund for their enlargement and maintenance. In no department of school work has there been in the past four years more advancement than in that of Libraries and Library work. Trained Librarians are now employed to assist in opening to the student the treasures of History, Literature and Science, and while it is at a considerable increase in expense the results are more than a justification therefor.

The following tables show the receipts and disbursements on this account for the past two years:

Receipts.

Schools.	Items.	1896-7.	1897-8.	Totals.
Milwaukee.....	Book revenues.....	\$1,171 81	\$1,295 76	\$2,467 57
Oshkosh.....	Book revenues.....	2,027 35	2,229 74	4,257 10
Platteville.....	Book revenues.....	1,383 10	1,188 75	2,571 85
River Falls.....	Book revenues.....	883 46	864 21	1,747 67
Stevens Point.....	Book revenues.....	1,662 75	1,516 56	3,179 31
Superior.....	Book revenues.....	611 46	854 50	1,465 96
Whitewater.....	Book revenues.....	1,264 32	1,269 19	2,533 51
Total.....		\$9,004 26	\$9,218 71	\$18,222 97

Disbursements.

Schools.	BOOKS, 1896-7.		BOOKS, 1897-8.		Salaries 2 years.	Totals.
	Text.	Reference.	Text.	Reference.		
Milwaukee.....	\$777 25	\$605 59	\$716 32	\$1,008 64	\$150 00	\$3,257 80
Oshkosh.....	1,315 64	391 44	1,489 23	891 35	150 00	4,237 66
Platteville.....	963 49	97 16	946 72	334 35	150 00	2,491 72
River Falls.....	666 54	257 55	1,773 09	675 32	150 00	3,522 50
Stevens Point.....	1,454 66	784 17	1,146 19	834 76	150 00	4,419 78
Superior.....	2,712 57	1,605 44	888 99	880 04	150 00	6,237 04
Whitewater.....	1,218 86	230 93	1,160 00	476 09	150 00	3,175 88
Totals.....	\$9,109 01	\$3,972 28	\$8,060 54	\$5,150 55	\$1,050 00	\$27,342 38

President's Report.

The excess of disbursements above receipts is practically the amount of appropriations for Reference Books during the past two years; but the fact is a little misleading, for while some of the Text-Book Libraries more than maintain themselves, others do not quite do it.

II. STUDENTS.

A comparison of the following tables with similar ones heretofore given, shows the following facts:

1. Increase of attendance { a. In 2 years 1,052
b. In 4 years 2,080
2. Increase of graduates { a. In 2 years 227
b. In 4 years 380

These figures prove that the system has grown in attendance nearly 32 per cent. in two years, and over 91 per cent. in four years; nearly 68 per cent. in two years and over 208 per cent. in four years in ability to furnish trained teachers; and they would seem to fully justify the expenditures reported, as well as the statements herein made concerning the condition and needs of the schools. And these results, which reflect so much credit upon the State and have placed it in the front rank in matters educational, are largely due to the wise and fostering care and the liberal policy of the Legislature.

Total enrollment of students.

Schools, 1896-7.	Normal.	Preparatory.	Gram-mar.	Intermediate.	Primary and kinderg't'n.	Special.	Totals.
Milwaukee.....	360	.....	56	74	98	.....	588
Oshkosh.....	642	.....	112	57	79	20	910
Platteville.....	481	46	49	39	46	65	726
River Falls.....	289	16	42	32	59	10	448
Stevens Point.....	344	42	59	51	46	9	551
Superior.....	247	20	45	70	45	.....	427
Whitewater.....	333	17	26	40	61	3	480
Totals.....	2,696	141	389	363	434	107	4,130
Schools, 1897-8.							
Milwaukee.....	394	*	71	77	88	.....	630
Oshkosh.....	701	†	118	66	89	26	1,000
Platteville.....	403	47	73	44	48	43	658
River Falls.....	252	7	31	29	128	4	451
Stevens Point.....	420	33	61	55	51	7	627
Superior.....	272	15	56	59	46	.....	448
Whitewater.....	355	25	27	55	68	6	536
Totals.....	2,797	127	437	385	518	86	4,350

* No preparatory classes.

† Preparatory work done in an allied academy, in 1896-7, 61, and in 1897-8, 103.

President's Report.

Number of graduates in two years.

Year	1896-7.		1897-8.		Totals.		
	Elementary.	Advanced.	Elementary.	Advanced.	Elementary.	Advanced.	Both courses.
Milwaukee.....	*	108	.....	136	.....	244	244
Oshkosh.....	56	49	55	68	111	117	228
Platteville.....	24	53	21	56	45	109	154
River Falls.....	20	9	29	9	49	18	67
Stevens Point.....	42	17	43	23	85	45	130
Superior.....	10	3	6	16	16	19	35
Whitewater.....	31	26	52	43	83	69	152
Totals.....	183	265	206	356	389	621	1,010

* School has no Elementary Course. Kindergarten Course, 33.

Total number of graduates.

SCHOOLS.	When opened.	COURSE.		Both.
		Elementary.	Advanced.	
Milwaukee.....	1885	.....	643	* 643
Oshkosh.....	1871	407	336	743
Platteville.....	1866	134	535	669
River Falls.....	1875	100	253	353
Stevens Point.....	1894	94	48	142
Superior.....	1896	16	19	35
Whitewater.....	1868	457	346	803
† Totals .....	.....	1,208	2,180	3,388

* Kindergarten Course 64. † No person counted twice.

It is to be noted that the two foregoing tables show that the number of graduates in the past two years is more than thirty per cent. of the whole number of graduates from the State Normal Schools.

III. FINANCES.

(a) *Principal Fund.*

Under the law this Fund is wholly managed by the Commissioners of Public Lands, the State Treasurer being custodian, by whose courtesy a report of all changes during each month is made to the Secretary of the Board. From the Secretary's books I am enabled to make the following statements:

President's Report.

The total Fund August 31, 1898, was \$1,926,097.75, of which \$128,508.63 was cash, \$1,470.24 represented premiums paid on bonds purchased and must ultimately pass to the debit of the account, and the sum of \$1,796,118.88 was in bonds and loans as follows:

1. Bonds and certificates at 7 per cent.....	\$555,700 00
2. Land contracts and ind'l loans— old law — at 7 per cent.....	4,701 50
3. Bonds at 6 per cent.....	9,000 00
4. Bonds at 5½ per cent.....	2,000 00
5. Bonds at 5 per cent.....	348,750 00
6. Bonds at 4½ per cent.....	114,000 00
7. Bonds at 4¼ per cent.....	25,000 00
8. Bonds at 4 per cent.....	215,000 00
9. Special loans at 7 per cent.....	5,000 00
10. Special loans at 6 per cent.....	500 00
11. Special loans at 5 per cent.....	109,298 80
12. Special loans at 4½ per cent.....	80,000 00
13. Special loans at 4¼ per cent.....	44,00 00
14. Special loans at 4 per cent.....	219,400 00
15. School district loans at 4 per cent.....	8,788 58
16. Loan Board of Regents of Normal Schools.....	55,000 00
Total.....	\$1,796,118 88

In the foregoing statement is included a loan of ten thousand (10,000) dollars to the Eau Claire Armory Company, at four and one-half per cent., secured by mortgage on the Armory at Eau Claire. Because of continued default in payment of accrued interest, proceedings were commenced for the foreclosure of the mortgage and they terminated in a judgment. The property, under the rules and practice of the court, will be sold sometime in February next. The security is considered inadequate and it is probable that the amount realized on the sale will be insufficient to pay the amount of the judgment. This loan was made in the year 1893, by the proper state officers, and without participation by the Board, and as it was a matter which they could neither judge of nor control, it seems but just that the state should indemnify the Trust Fund. I would respectfully suggest that it would be the proper course for the Legislature to promptly provide for the bidding in of the property at the judicial sale in the name of and in the interest of the State, and at the same time by proper legislation transfer to the Normal School Fund the amount of the principal, ten thousand (10,000) dollars, and to the Normal School Fund Income the unpaid interest which will amount on the day of sale to about twenty-five hundred (2,500) dollars.

President's Report.

Two years ago the Fund was earning at the rate of \$95,711.03, while now the rate is \$92,518.54 per year, the decrease being the result of enforced refunding at lower rates, as was predicted by my predecessor, the small constant increase of the Fund itself not being sufficient to counterbalance the loss.

The following is a detailed list of the securities summarized above, to-wit:

CERTIFICATES.

Certificates of indebtedness.....	\$515,700 00
-----------------------------------	--------------

BONDS.

1. Ashland City funding.....	\$42,000 00
2. Ashland county coupon.....	25,000 00
3. Beaver Dam city.....	12,000 00
4. Columbus city.....	13,000 00
5. Chippewa Falls city coupon.....	35,000 00
6. Durand city.....	3,000 00
7. Edgerton city school coupon.....	10,000 00
8. Eau Claire city bridge coupon.....	10,000 00
9. Glenwood town water-works coupon.....	9,000 00
10. Hudson city coupon.....	39,000 00
11. Joint School District No. 6, Plymouth, Wonewoc & Elroy city.....	2,000 00
12. Kenosha city readjustment.....	100,000 00
13. La Crosse city coupon.....	10,000 00
14. Madison city refunding.....	60,000 00
15. Madison city coupon.....	25,000 00
16. Manitowoc county refunding.....	70,000 00
17. Menasha city coupon.....	3,250 00
18. Milwaukee water refunding.....	94,000 00
19. Milwaukee water registered.....	40,000 00
20. Milwaukee school coupon.....	50,000 00
21. Oshkosh city coupon.....	43,000 00
22. Portage county funding.....	24,000 00
23. Richland Center city water-works.....	3,000 00
24. School District No. 8, Sheboygan county.....	8,500 00
25. Vernon County Insane Asylum.....	18,000 00
26. Vernon County Poor House.....	15,000 00
Total.....	<u>\$753,750 00</u>

SPECIAL LOANS.

1. Bayfield town.....	\$9,000 00
2. Board of Regents Normal Schools.....	55,000 00
3. Boyd village.....	500 00
4. Brown county.....	5,000 00
5. Bloomer village.....	4,000 00
6. Cleveland town.....	1,275 00
7. Chippewa county.....	14,315 80
8. Cumberland city.....	4,720 00
9. Clintonville city.....	3,600 00
10. Dunn county.....	40,000 00
11. Eau Claire Light Guard Armory Co.....	10,000 00
12. Fond du Lac city.....	18,000 00
13. Grand Rapids Board of Education.....	7,000 00
14. Hammond village.....	1,328 00
15. Historical Library Building Association.....	55,000 00
16. Jackson county.....	16,000 00
17. Lincoln county.....	4,000 00
18. Madison City Board of Education.....	30,000 00
19. Madison city.....	15,000 00

President's Report.

20. Menomonee city.....	\$54,000 00
21. Milwaukee Light Horse Squadron.....	30,000 00
22. Mineral Point city.....	9,000 00
23. Mosinee town.....	400 00
24. New London city.....	12,000 00
25. Onalaska city.....	1,000 00
26. Pelican town.....	4,200 00
27. Phillips city.....	6,000 00
28. Prairie du Chien city.....	10,000 00
29. Rhinelander city.....	3,000 00
30. Richmond town.....	4,500 00
31. Seneca town.....	1,200 00
32. Shawano city.....	2,560 00
33. Spooner town.....	6,500 00
34. Waupaca city.....	7,500 00
35. Whitefish Bay Village.....	4,200 00
36. Washburn county.....	12,000 00
37. Whitewater City Bd. Education.....	2,000 00
38. Winnebago county.....	44,000 00
39. Withee town.....	800 00
40. Wood town.....	4,000 00
Total.....	<u>\$513,198 80</u>

SCHOOL DISTRICT LOANS.

1. Howard No. 2, Brown Co.....	\$980 00
2. Lewis No. 5, Clark Co.....	228 58
3. Rib Lake No. 1, Taylor Co.....	560 00
4. Waterloo Village No. 1, Jefferson Co.....	7 000 00
Total.....	<u>\$8,768 58</u>

(b) *Income Fund.*

This fund is wholly devoted by law to establishing and maintaining Normal Schools and Teachers' Institutes, and its expenditure is placed exclusively in the hands of the Board. During the biennial period from July 3, 1896, to July 14, 1898, inclusive, there have been expended \$662,304.13, as shown by the tables of classified expenditures which follow the detailed list of paid vouchers given herewith. Many of the heaviest extraordinary expenses have been already mentioned, and it is easily seen that large amounts in excess of ordinary running expenses must be disbursed annually, if the system be permitted to expand in answer to the demands of the public. More than \$95,000 have been expended for buildings and real estate, and over \$15,000 more for permanent and unusual betterments, not to mention the completion of the equipment of the school at Superior and the replacing of equipment lost by the fire at River Falls.

The following statement of the Treasurer of the Board gives the receipts and disbursements as shown by the books in his office.

President's Report.

TREASURER'S STATEMENT.

Accounts with Normal School Fund Income and Treasurer of Board of Normal School Regents from July 1st, 1896, to June 30th, 1898, inclusive, as shown from books in State Treasurer's office.

	Dr.	Cr.
Normal School Fund Income:		
To income from investments	\$158,125 49	
Interest from banks	305 24	
Tuition, rents, etc	38,643 64	
State tax	296,412 04	
Fifth Normal School	10,000 00	
Insurance, River Falls Normal School	44,870 13	
Miscellaneous	15 40	
By disbursements, refunds		\$557 44
Transfers, Treasurer of Board		543,101 13
Balance		4,713 37
	\$548,371 94	\$548,371 94
Treasurer Board of Normal Regents:		
To transfers from Income Fund	\$543,101 13	
Loan from Normal School Fund	60,000 00	
Appropriation Seventh Normal School	72,500 00	
Appropriation Teachers' Institutes	6,000 00	
By balance overdrawn June 30, 1896		\$6,032 69
Disbursements, Secretary's warrants		661,348 87
Disbursements, transfer account erroneous payment		2,636 30
Balance on hand June 30, 1898		11,583 27
	\$681,601 13	\$681,601 13
Total balance on hand June 30, 1898:		
In Income Fund	\$4,713 37	
Treasurer Board of Regent's hands	11,583 27	
		\$16,296 64

SEWELL A. PETERSON,

Treasurer Ex-officio Board Normal School Regents.

President's Report.

VOUCHERS AND SCHEDULES.

The following is a detailed list of the vouchers paid during the school year 1896-97 by authority of the Board.

1896 No.	Date.	To whom and for what paid.	Amount.
455	July 22	S. Y. Gillan, advertising schools, Board.....	\$28 75
456	22	Edna M. Greenfield, salary, clerk, Board.....	45 00
457	22	State Journal Printing Co., inc. Inst.....	28 50
458	22	Democrat Printing Co., expenses, Sec'y's office, Board.....	55 00
459	22	S. S. Rockwood, salary Sec'y, Board.....	150 00
460	22	S. S. Rockwood, expenses, office, Board.....	8 75
461	22	W. C. Hewitt, expenses, salary, Institute.....	133 95
462	22	W. C. Hewitt, expenses, salary, Institute.....	68 82
463	22	A. J. Hutton, expenses, salary, Institute.....	44 45
464	22	E. Ballard, pay-roll, River Falls.....	145 00
465	22	S. P. Peterson, repairs, River Falls.....	19 53
466	22	D. A. Ostrum, repairs, River Falls.....	9 00
467	22	Michael Crean, repairs, River Falls.....	17 25
468	22	The A. H. Andrews Co., furniture, River Falls.....	42 50
469	22	Thomas Walker, repairs, River Falls.....	10 80
470	22	A. E. Thompson, pay-roll, Oshkosh.....	210 00
471	22	T. E. Fulleg, repairs, Oshkosh.....	3 50
472	22	Oshkosh Water Works Co., water rent, Oshkosh.....	37 50
473	22	A. C. McClurg & Co., reference books, Oshkosh.....	40 08
474	22	Barnes & Crane, misc., Oshkosh.....	337 50
475	22	E. D. Coe, pay-roll, Whitewater.....	150 00
476	22	Mil. Mirror & Art Glass Wks., building, Superior.....	22 10
477	22	Carl Wirth, building, Superior.....	79 50
478	22	The Barnett & Record Co., building, Superior.....	4,770 00
479	22	C. I. King, building, Superior, repairs, Stevens Point.....	50 53
480	22	Jas. O. Raymond, pay-roll, Stevens Point.....	116 00
481	22	Lizzie P. Swan, misc., Stevens Point.....	70 00
482	22	E. L. Everts, misc., Stevens Point.....	14 25
483	22	J. H. Derse, misc., Stevens Point.....	34 95
484	22	Chas. Pittelkow, pay-roll, Milwaukee.....	190 00
485	22	Chas. Pittelkow, water rent, Milwaukee.....	40 08
486	22	C. H. Marhoff, repairs, Milwaukee.....	4 01
487	22	F. Brownell, repairs, Milwaukee.....	11 07
488	22	The Bruss-Ritter Co., appar., cab., Milwaukee.....	142 75
489	22	The Chas. Baumbach Co., repairs, Milwaukee.....	42 30
490	22	Wisconsin Telephone Co., misc., Milwaukee.....	15 00
491	22	M. Thierbach & Co., expenses Sec'y's office, Board.....	85 00
492	Aug. 26	S. S. Rockwood, expense Sec'y's office, Board.....	18 79
493	26	S. S. Rockwood, salary, Sec'y, Board.....	150 00
494	26	Edna M. Greenfield, salary, clerk, Board.....	45 00
495	26	Freeman H. Lord, pay-roll, River Falls.....	90 00
496	26	John Klein, Jr., repairs, River Falls.....	5 20
497	26	Michael Crean, repairs, River Falls.....	12 00
498	26	The Gillette, Herzog Mfg. Co., repairs, River Falls.....	300 00
499	26	B. H. Erdall, repairs, River Falls.....	15 50
500	26	F. M. Ulrich, repairs, River Falls.....	49 34
501	26	W. S. Ensign, repairs, River Falls.....	152 33
502	26	A. M. Nelson, repairs, River Falls.....	12 00
503	26	John S. Scott, repairs, River Falls.....	18 50
504	26	D. B. Hyatt, repairs, River Falls.....	2 00
505	26	C. B. Scott, repairs, River Falls.....	5 50
506	26	R. S. Freeman, repairs, River Falls.....	21 30
507	26	T. Jenkins, Jr., pay-roll, Platteville (Aug.).....	90 00
508	26	T. Jenkins, Jr., pay-roll, Platteville (July).....	90 00
509	26	J. V. Youmans, misc., Platteville.....	7 50
510	26	Johnson Electric Service Co., repairs, Platteville.....	14 93
511	26	R. T. Verran, repairs, Platteville.....	164 59
512	26	J. A. Henry, repairs, Platteville.....	265 99
513	26	J. O. Raymond, pay-roll, Stevens Point.....	116 00
514	26	J. H. Harris, misc., Stevens Point.....	39 00
515	26	Burdick, Armitage & Allen, printing, Stevens Point.....	194 90
516	26	Lizzie P. Swan, misc., Stevens Point.....	20 75
517	26	W. J. Brier, expenses, salary, Institute.....	396 58
518	26	W. C. Hewitt, expenses, salary, Institute.....	285 27
519	26	A. M. Olson, expenses, salary, Institute.....	15 00
520	26	L. H. Clark, expenses, salary, Institute.....	57 05
521	26	J. F. Sims, expenses, salary, Institute.....	156 69
522	26	H. L. Terry, expenses, salary, Institute.....	98 31
523	26	A. A. Upham, expenses, salary, Institute.....	45 00
524	26	W. L. Morrison, expenses, salary, Institute.....	108 66

President's Report.

525	26	W. J. Garbraith, expenses, salary, Institute.....	37 75
526	26	L. D. Harvey, expenses, salary, Institute.....	58 50
527	26	F. E. Doty, expenses, salary, Institute.....	25 00
528	26	A. J. Hutton, expenses, salary, Institute.....	276 17
529	26	Chas. O. Merica, expenses, salary, Institute.....	30 00
530	26	W. J. Pollock, expenses, salary, Institute.....	37 50
531	26	H. C. Buell, expenses, salary, Institute.....	25 00
532	26	J. E. Riordan, expenses, salary, Institute.....	57 29
533	26	F. W. Meisnest, expenses, salary, Institute.....	35 00
534	26	Mary D. Bradford, expenses, salary, Institute.....	60 00
535	26	W. H. Hickock, expenses, salary, Institute.....	39 26
536	26	S. Y. Gillan, expenses, salary, Institute.....	150 70
537	26	Thos. W. Boyce, expenses, salary, Institute.....	35 00
538	26	C. P. Cary, expenses, salary, Institute.....	60 90
539	26	Mrs. Leona W. Richmond, expenses, salary, Institute.....	96 81
540	26	Mary D. Bradford, expenses, salary, Institute.....	51 65
541	26	E. W. Walker, expenses, salary, Institute.....	297 88
542	26	W. H. Cheever, expenses, salary, Institute.....	232 95
543	26	Carrie J. Smith, expenses, salary, Institute.....	25 00
544	26	C. S. Brewer, expenses, salary, Institute.....	44 36
545	26	D. McGregor, expenses, salary, Institute.....	207 36
546	26	Frederick E. Bolton, expenses, salary, Institute.....	20 00
547	26	Wm. F. Sell, expenses, salary, Institute.....	25 25
548	26	Albert H. Sanford, expenses, salary, Institute.....	35 00
549	26	J. P. Briggs, expenses, salary, Institute.....	25 00
550	26	Geo. H. Shutts, expenses, salary, Institute.....	156 06
551	26	Geo. Beck, expenses, salary, Institute.....	80 00
552	26	E. C. Perisho, expenses, salary, Institute.....	67 00
553	26	C. H. Sylvester, expenses, salary, Institute.....	203 50
554	26	Chas. Pittelkow, pay-roll, Milwaukee.....	190 00
555	26	D. O. Mahoney, misc., Milwaukee.....	17 50
556	26	J. H. Harris, misc., Milwaukee.....	39 00
557	26	H. Mooers Co., repairs, Milwaukee.....	1,000 00
558	26	R. H. Halsey, misc., Milwaukee.....	19 53
559	26	E. D. Coe, pay-roll, Whitewater.....	100 00
560	26	Ludwig Kumlein, appar., cab., Whitewater.....	50 25
561	26	J. H. Goodearle, repairs, Whitewater.....	150 58
562	26	J. H. Harris, misc., Whitewater.....	39 00
563	26	Geo. Dawley, repairs, Whitewater.....	25 50
564	26	J. H. Ellis, misc., Whitewater.....	11 50
565	26	A. E. Thompson, pay-roll, Oshkosh.....	100 00
566	26	J. H. Harris, misc., Oshkosh.....	39 00
567	26	W. H. Davis, repairs, Oshkosh.....	769 39
568	26	Oshkosh Decorating Co., repairs, Oshkosh.....	572 44
569	26	W. H. Crawford, repairs, Oshkosh.....	500 00
570	26	M. T. Park, misc., Oshkosh.....	17 40
571	26	John R. Service, repairs, Oshkosh.....	13 10
572	26	Wm. Savage, repairs, Oshkosh.....	29 75
573	26	F. M. Hasbrouck, repairs, Oshkosh.....	105 46
574	26	Ludwig Kumlein, appar., cab., Oshkosh.....	23 05
575	26	Ludwig Kumlein, appar., cab., Oshkosh.....	37 25
576	26	Ole Hard, building, Superior.....	827 20
577	26	Superior Hardware Co., misc., Superior.....	43 80
578	26	Carl Wirth, building, Superior.....	50 10
579	26	C. H. Sunderland, misc., Superior.....	175 00
580	26	Seavey, White & Co., misc., Superior.....	27 25
581	26	J. P. Bampfyde, stationery, Superior.....	5 00
582	26	Duluth Telephone Co., misc., Superior.....	12 50
583	26	Adolph Theedt, building, Superior.....	29 00
584	26	The Barnett & Record Co., building, Superior.....	318 46
585	26	Ober, Cash & Ekstrand, building, Superior.....	5,000 00
586	26	C. Leona Pinkham, salaries, Superior.....	50 00
587	26	Allyn & Bacon, text-books, Superior.....	34 16
588	26	A. M. & G. M. McDonald, building, Superior.....	26 08
589	26	E. H. Butler & Co., text-books, Superior.....	140 01
590	26	Scott, Foresman & Co., text books, Superior.....	29 00
591	26	Logue, Whitney Furniture Co., furniture, Superior.....	67 00
592	26	Sheldon & Co., text-books, Superior.....	52 00
593	26	Kelly & May, furniture, Superior.....	60 00
594	26	I. C. McNeill, misc., Superior.....	19 93
595	26	Lake Superior Supply Co., fuel and light, Superior.....	75 73
596	26	Stack & Co., misc., Superior.....	14 70
597	26	Barnett & Record Co., building, Superior.....	3,006 00
598	26	Telegram Printing Co., printing, Superior.....	122 60
599	26	Kirby Thomas, misc., Superior.....	25 00
600	26	Frank Ostrander, expenses, service, Board.....	31 85
601	26	C. I. King, expert services, Board.....	177 80

President's Report.

602	26	James O. Raymond, expenses, service, Board.....	34 20
603	26	E. D. Coe, expenses, service, Board.....	31 70
604	26	I. C. McNeill, sta., misc., Superior.....	125 73
605	Sept. 4	S. S. Rockwood, expenses Sec'y's office, Board.....	15 55
606	4	Chas. Pittelkow, expenses, service, Board.....	65 14
607	4	Frank Ostrand, expenses, service, Board.....	14 80
608	4	W. H. Schulz, expenses, salary, Institute.....	95 37
609	4	I. N. Mitchell, salary, Institute.....	50 00
610	4	A. A. Upham, expenses, salary, Institute.....	27 25
611	4	Edmond Berrigan, expenses, salary, Institute.....	49 42
612	4	E. W. Walker, expenses, salary, Institute.....	125 69
613	4	Jno. N. Foster, salary, Institute.....	30 00
614	4	C. D. Kipp, expenses, salary, Institute.....	54 06
615	4	J. H. Bille, salary, Institute.....	20 00
616	4	J. E. Riordan, salary, Institute.....	40 00
617	4	G. L. Bowman, salary, Institute.....	27 00
618	4	I. N. Mitchell, appar., cab., Milwaukee.....	80 88
619	4	Manville Covering Co., repairs, Milwaukee.....	125 00
620	4	Johnson Electric Service Co., repairs, Milwaukee.....	240 00
621	4	Manville Covering Co., repairs, Milwaukee.....	105 28
622	4	Mullets Bros. Photo. Supply Co., appar., cab., Superior.....	11 25
623	4	The Mills & LeClair Lumber Co., misc., Superior.....	184 93
624	4	The Werner Book Co., text-books, Superior.....	52 38
625	4	J. F. Chamberlin & Co., appar., cab., sta., Superior.....	61 13
626	4	Duluth Seating Co., furniture, Superior.....	162 00
627	4	Tracy, Gibbs & Co., text-books, Superior.....	24 00
628	4	Kelly & May, furniture, Superior.....	183 63
629	4	Inling Bros. & Everard, appar., cab., Superior.....	35 23
630	4	George Brumder, reference books, Superior.....	11 50
631	4	Ole Haru, misc., Superior.....	40 00
632	4	Frank H. Nutter, misc., Superior.....	1 00
633	4	A. E. Holmes & Bros., building, Superior.....	16 95
634	4	Maynard, Merrill & Co., text-books, Superior.....	42 31
635	4	Edward L. Seyfried, furniture, Superior.....	196 35
636	4	McMullen Bros., appar., cab., fur., Superior.....	12 01
637	4	The Buckstaff & Edwards Co., furniture, Superior.....	83 10
638	4	Spicer-Holden Co., misc., Superior.....	20 93
639	4	Webster Mfg. Co., furniture, Superior.....	189 83
640	4	Manitowoc Seating Co., furniture, Superior.....	1,847 40
641	4	W. H. Edholm, furniture, Superior.....	2 50
642	4	Meyst & Coates, misc., Superior.....	100 00
643	4	D. C. Heath & Co., text-books, Superior.....	116 27
644	4	Draper Drug Co., misc., Superior.....	6 95
645	4	American Book Co., text-books, Superior.....	322 72
646	4	Carl Wirth, building, Superior.....	296 94
647	4	Harry W. Jones, building, Superior.....	534 07
648	4	Barnett & Record Co., building, Superior.....	10, 304 76
649	23	S. S. Rockwood, expenses, Sec'y's office, Board.....	9 17
650	23	S. S. Rockwood, salary, Secretary, Board.....	150 00
651	23	Edna M. Greenfield, salary clerk, Board.....	45 00
652	23	J. Knauber Litho. Co., expenses Sec'y's office, Board.....	15 00
653	23	State Journal Printing Co., printing, Board.....	17 50
654	23	James Conklin, expenses Sec'y's office, Board.....	21 80
655	23	E. D. Coe, expenses, service, Board.....	23 85
656	23	Chas. P. Sinnott, salary, expenses, Institute.....	1/8 26
657	23	H. B. Wentz, salary, Institute.....	15 00
658	23	E. W. Walker, expenses, salary, Institute.....	60 08
659	23	W. J. Pollock, salary, Institute.....	37 50
660	23	C. M. Gleason, salary, Institute.....	25 00
661	23	W. H. Schultz, salary, Institute.....	30 00
662	23	C. J. Brewer, salary, Institute.....	20 00
663	23	E. C. Wiswall, salary, Institute.....	40 00
664	23	C. H. Syvester, expenses, salary, Institute.....	137 77
665	23	W. H. Chever, expenses, salary, Institute.....	288 92
666	23	W. J. Brier, expenses, salary, Institute.....	133 21
667	23	Frank J. Mack, salary, Institute.....	85 25
668	23	A. J. Hutton, expenses, salary, Institute.....	147 50
669	23	D. McGregor, expenses salary, Institute.....	429 77
670	23	Ida A. Elliott, salary, Institute.....	38 85
671	23	James O. Raymond, pay-roll, Stevens Point.....	2,276 00
672	23	Freeman H. Lord, pay-roll, River Falls.....	2,173 00
673	23	A. M. Nelson, repairs, River Falls.....	7 65
674	23	Schuneman & Evans, furniture, River Falls.....	18 00
675	23	E. D. Coe, pay-roll, Whitewater.....	2,506 25
676	23	Ludwig Kumlain, appar., cab., Whitewater.....	30 40
677	23	Wm. Kohlring & Sons, furniture, Whitewater.....	400 00
678	23	H. Mooers Co., repairs, Whitewater.....	93 07

President's Report.

679	23	C. R. Barnes, misc., Whitewater.....	10 88
680	23	Chas. Pittelkow, pay-roll, Milwaukee.....	3,068 00
681	23	Ludwig Kumlein, appar., cab., Milwaukee.....	25 25
682	23	Thomas Gardner, repairs, Milwaukee.....	250 00
683	23	A. E. Thompson, pay-roll, Oshkosh.....	3,653 00
684	23	Oshkosh Decorating Co., repairs, Oshkosh.....	300 00
685	23	C. I. King, repairs, Oshkosh.....	58 53
686	23	Ludwig Kumlein, appar., cab., Oshkosh.....	19 50
687	23	Adelle Hamilton, salaries, Oshkosh.....	70 00
688	23	Margaret J. Alden, salaries, Oshkosh.....	10 00
689	23	Frank Ostrander, pay-roll, Superior.....	1,860 75
690	23	N. A. Harvey, appar., cab., Superior.....	51 23
691	23	A. E. Holmes & Bro., misc., Superior.....	29 05
692	23	Ober, Cash & Ekstrand, building, Superior.....	2,000 00
693	23	C. H. Sunderland, misc., Superior.....	1,652 45
694	23	Draper Drug Co., appar., cab., Superior.....	63 54
695	23	Superior Supply & Fuel Co., misc., Superior.....	2 39
696	23	Ginn & Co., text-books, Superior.....	74 04
697	23	Ginn & Co., text-books, Superior.....	48 00
698	23	Henry Holt & Co., text-books, Superior.....	51 02
699	23	A. C. McClurg & Co., text-books, Superior.....	28 50
700	23	G. P. Putnam & Sons, text-books, Superior.....	16 30
701	23	A. Flannagan, text books, Superior.....	25 60
702	23	N. C. Hardy, misc., Superior.....	70 00
703	23	Pease, Roach Hdw. Co., misc., Superior.....	6 60
704	23	West Superior Wood Working Co., appar., cab., Superior..	375 29
705	23	Spicer Holden Co., misc., Superior.....	5 75
706	23	W. A. Oimsted Sci. Co., appar., cab., Superior.....	823 03
707	23	Strothman Iron Co., building, Superior.....	21 00
708	23	Walmsley, Fuller & Co., appar., cab., misc., Superior.....	42 56
709	23	Wis. School Supply Co., furniture, Superior.....	218 25
710	23	F. H. Dam & Co., furniture, Superior.....	84 25
711	23	Silver, Burdett & Co., text-books, Superior.....	23 10
712	23	American Book Co., text-books, Superior.....	38 95
713	23	The Barnett & Record Co., building, Superior.....	226 68
714	23	Kelly & May, furniture, Superior.....	91 75
715	23	Robert Agrell, building, Superior.....	123 00
716	23	Henry Hell Chem. Co., appar., cab., Superior.....	507 06
717	23	Stack & Co., misc., Superior.....	7 55
718	23	Starkey & Tyra, building, Superior.....	125 00
719	23	Keavugh Bros., misc., Superior.....	4 65
720	23	Lake Superior Supply Co., fuel and light, Superior.....	53 67
721	23	C. W. Smith, building, Superior.....	49 40
722	23	Superior Hardware Co., building, Superior.....	45 77
723	23	Whitall, Tatum & Co., appar., cab., Superior.....	86 81
724	23	J. P. Bampfyde, stationery, Superior.....	34 00
725	23	Werner School Book Co., text-books, Superior.....	37 80
726	23	Mills & Le Clair Lumber Co., building, Superior.....	46 99
727	23	John Meyette, building, Superior.....	9 65
728	23	Shattuck & Hislop, misc., Superior.....	31 50
729	23	Levi Barkey, misc., Superior.....	7 80
730	23	The Fulton Drug Co., appar., cab., Superior.....	14 05
731	23	C. W. Bowron, building, Superior.....	100 00
732	23	I. C. McNeil, misc., Superior.....	17 21
733	23	Bonnett, Michie & Co., repairs, Oshkosh.....	700 00
734	23	T. Jenkins, Jr., pay-roll, Platteville.....	2,646 00
735	23	McMullen Bros., misc., Superior.....	48 06
736	Oct. 28	S. S. Rockwood, salary Sec'y, Board.....	150 00
737	28	S. S. Rockwood, expense Sec'y's office, Board.....	14 00
738	28	Edna M. Greenfield, salary clerk, Board.....	45 00
739	28	C. I. King, expert services, Board.....	179 10
740	28	Frank Ostrander, pay-roll, Superior.....	1,755 00
741	28	E. D. Coe, pay-roll, Whitewater.....	2,501 00
742	28	James O. Raymond, pay-roll, Stevens Point.....	2,401 00
743	28	Freeman H. Lord, pay-roll, River Falls.....	2,195 00
744	28	T. Jenkins, Jr., pay-roll, Platteville.....	2,690 00
745	28	Chas. Pittelkow, pay-roll, Milwaukee.....	3,083 00
746	28	A. E. Thompson, pay-roll, Oshkosh.....	3,749 00
747	28	Franklin Educational Co., app., cab., River Falls.....	35 22
748	28	Anna E. Schafer, misc., River Falls.....	17 15
749	28	James O. Raymond, expense, Board.....	24 45
750	28	Frank Ostrander, expense, Board.....	35 74
751	28	Ludwig Kumlein, appar., cab., Oshkosh.....	30 25
752	28	A. C. McClurg & Co., text, ref. books, Oshkosh.....	76 30
753	28	Oshkosh Decorating Co., repairs, Oshkosh.....	204 29
754	28	W. H. Davis, repairs, Oshkosh.....	110 10

President's Report.

755	Oct. 28	Bonnett, Michie & Co., repairs, Oshkosh.....	50 80
756	28	Bonnett, Michie & Co., repairs, Oshkosh.....	656 48
757	28	Robert Brand & Sons, furnaure, Oshkosh.....	157 15
758	28	Stack Bros. Co., furniture, Oshkosh.....	103 28
759	28	E. P. Allis Co., repairs, Stevens Point.....	807 00
760	28	Franklin A. Blood, repairs, Stevens Point.....	5 00
761	28	R. A. Cook, repairs, Stevens Point.....	850 67
762	28	J. H. Harris, repairs, Stevens Point.....	39 00
763	28	Direct Separator Co., repairs, Stevens Point.....	24 00
764	28	Library Bureau, stationery, Stevens Point.....	58 50
765	28	R. A. Cook, fuel and light, Stevens Point.....	1,228 51
766	28	Manitowoc Seating Co., furniture, Stevens Point.....	181 05
767	28	Eugene Dietzgen, furniture, Stevens Point.....	114 00
768	28	A. C. McClurg & Co., text and ref. books, Stevens Point.....	305 50
769	28	F. A. Plummer & Co., reference books, Stevens Point.....	21 93
770	28	Henry Holt & Co., text, ref. books, Stevens Point.....	59 03
771	28	Bausch & Lomb Opt. Co., app., cab., Stevens Point.....	153 33
772	28	C. Hennecke, app., cab., misc., Stevens Point.....	28 25
773	28	Wisconsin School Supply Co., fur., sta., Platteville.....	52 00
774	28	J. V. Gardner, fuel, Platteville.....	211 81
775	28	W. C. Hewitt, expense, salary, Institute.....	69 97
776	28	W. H. Cheever, expense, salary, Institute.....	98 18
777	28	A. H. Sage, expense, salary, Institute.....	50 00
778	28	A. H. Sage, expense, salary, Institute.....	50 00
779	28	J. W. Livingston, expenses, salary, Institute.....	205 30
780	28	A. H. Sage, expenses, salary, Institute.....	66 30
781	28	E. W. Walker, expenses, salary, Institute.....	101 92
782	28	Narragansette Machine Co., misc., Whitewater.....	173 55
783	28	Whitewater Water Works, water rent, Whitewater.....	76 89
784	28	Gust Wegner, fuel and light, Whitewater.....	946 75
785	28	Pette & Meyer Coal Co., fuel and light, Milwaukee.....	206 81
786	28	A. C. McClurg & Co., ref. books, Milwaukee.....	44 84
787	28	The Jas. Shaver Granite & Marble Co., ap., cab., Milwaukee.....	36 00
788	28	P. R. Dengel & Co., repairs, Milwaukee.....	176 32
789	28	The Buckstaff-Edwards Co., furniture, Milwaukee.....	60 68
790	28	A. C. McClurg & Co., reference books, Milwaukee.....	31 92
791	28	Wisconsin School Supply Co., furniture, Milwaukee.....	184 80
792	28	The Bruss-Ritter Co., repairs, Milwaukee.....	92 47
793	28	Chas. Pittelkow, water rent, Milwaukee.....	14 44
794	28	Stack Bros., building, Superior.....	816 93
795	28	Carl Wirth, building, Superior.....	64 45
796	28	Northwestern Slate Co., building, Superior.....	908 14
797	28	Strothman Iron Co., building, Superior.....	11 24
798	28	Harman-Whipple Co., stationery, Superior.....	13 45
799	28	J. P. Bamfylde & Co., stationery, Superior.....	16 00
800	28	Silver, Burdette & Co., stationery, Superior.....	2 02
801	28	Silver, Burdette & Co., stationery, Superior.....	3 17
802	28	R. C. Mast, stationery, Superior.....	46 25
803	28	Allyn & Lacon, stationery, Superior.....	5 40
804	28	The Prang Educational Co., stationery, Superior.....	52 80
805	28	The Prang Educational Co., furniture, Superior.....	53 25
806	28	Stack & Co., furniture, Superior.....	13 28
807	28	Webster Mfg. Co., furniture, Superior.....	141 50
808	28	R. G. Spaulding & Bros., furniture, Superior.....	250 25
809	28	F. H. Dam & Co., furniture, Superior.....	75 00
810	28	Duluth School Seating Co., furniture, Superior.....	113 85
811	28	L. W. Lightbody, furniture, Superior.....	349 40
812	28	Spicer, Holden Co., furniture, Superior.....	5 00
813	28	F. W. Edholm, furniture, Superior.....	700 00
814	28	Frank J. Hall, appa., cab., Superior.....	35 70
815	28	W. A. Olmsted Sci. Co., appar., cab., Superior.....	48 14
816	28	Draper Drug Co., appar., cab., Superior.....	14 30
817	28	Zimmerman Bros., appar., cab., Superior.....	10 75
818	28	Huth & Sydney, appar., cab., Superior.....	12 52
819	28	Choate-Hollister Furniture Co., appar., cab., Superior.....	592 00
820	28	H. W. Munson, appar., cab., Superior.....	25 45
821	28	Henry Heil Chem. Co., appar., cab., Superior.....	28 87
822	28	Bausch & Lomb Opt. Co., appar., cab., Superior.....	1,032 24
823	28	Superior Water, Light & Power Co., water rent, Superior.....	268 84
824	28	Heil & Co., misc., Superior.....	13 51
825	28	C. W. Smith, misc., Superior.....	105 85
826	28	McMullen Bros., misc., Superior.....	58 34
827	28	Lizzie P. Swan, misc., Superior.....	70 00
828	28	Buffalo Oil Co., misc., Superior.....	5 75
829	28	H. E. Holcomb, misc., Superior.....	20 75
830	28	Ole Hard, misc., Superior.....	23 10
831	28	Wm. C. DeLong, misc., Superior.....	16 86

President's Report.

832	28	Geo. T. Johnson, misc., Superior.....	16	70
833	28	Hunter & Redman, misc., Superior.....	42	50
834	28	U. S. School Furniture Co., misc., Superior.....	31	75
835	28	U. S. School Furniture Co., misc., Superior.....	53	57
836	28	Draper Drug Co., misc., Superior.....	14	51
837	28	A. G. Spaulding & Bro., misc., Superior.....	490	60
838	28	S. D. Seavey & Co., misc., Superior.....	9	65
839	28	Maynard, Merrill & Co., text-books, Superior.....	11	25
840	28	Maynard, Merrill & Co., text-books, Superior.....	41	04
841	28	Maynard, Merrill & Co., text-books, Superior.....	4	06
842	28	Silver, Burdette & Co., text-books, Superior.....	50	00
843	28	Werner School Book Co., text-books, Superior.....	13	50
844	28	Werner School Book Co., text-books, Superior.....	17	10
845	28	American Book Co., text-books, Superior.....	10	40
846	28	American Book Co., text-books, Superior.....	12	25
847	28	American Books Co., text-books, Superior.....	10	80
848	28	American Book Co., text-books, Superior.....	32	80
849	28	American Book Co., text-books, Superior.....	133	03
850	28	D. C. Heatn & Co., text-books, Superior.....	69	15
851	28	A. Flannagan, text-books, Superior.....	23	56
852	28	E. W. Butler & Co., text-books, Superior.....	71	35
853	28	Sheldon & Co., text-books, Superior.....	5	76
854	28	Ginn & Co., text books, Superior.....	67	76
855	28	Eldredge & Co., text-books, Superior.....	21	60
856	28	W. S. Russell, Agent, text-books, Superior.....	30	48
857	28	Maynard, Merrill & Co., text-books, Superior.....	10	80
858	28	Henry Holt & Co., text-books, Superior.....	13	69
859	28	American Book Co., text-books, Superior.....	8	00
860	28	Henry Holt & Co., text-books, Superior.....	14	28
861	28	Thomas-Charles Co., text-books, Superior.....	28	80
862	28	Henry Holt & Co., text-books, Superior.....	7	15
863	28	Thomas-Charles & Co., text-books, Superior.....	3	20
864	28	Henry Holt & Co., text-books, Superior.....	6	89
865	28	I. C. McNeill, app., cab., ref. bks., misc., Superior.....	115	30
866	28	Telegram Printing Co., sta., ref. books, Superior.....	157	40
867	28	Maynard, Merrill & Co., ref. books, Superior.....	12	90
868	28	A. C. McClurg & Co., reference books, Superior.....	299	93
869	28	R. L. Polk & Co., reference books, Superior.....	3	00
870	28	O. N. Nelson, reference books, Superior.....	3	00
871	28	Mrs. Bessie Webster, reference books, Superior.....	22	00
872	28	Ohio Coal Co., fuel and light, Superior.....	246	45
873	28	The Logue & Whitney Fur. Co., furniture, Superior.....	15	00
874	28	Rose C. Swart, expenses, salary, Institute.....	31	35
875	28	A. C. McClurg & Co., text-books, Superior.....	6	56
876	28	C. P. McDowell, salaries, Superior.....	24	33
877	Nov. 20	S. S. Rockwood, salary, secretary of Board.....	150	00
878	20	S. S. Rockwood, expenses Secretary's office, Board.....	9	36
879	20	Freeman H. Lord, pay-roll, River Falls.....	2,195	00
880	20	J. O. Raymond, pay-roll, Stevens Point.....	2,334	00
881	20	T. Jenkins, Jr., furniture, Platteville.....	228	29
882	20	J. J. Fruit, expense, Board.....	16	40
883	20	A. A. Upham, appar., cab., Whitewater.....	150	25
884	20	A. J. Hutton, expenses, salary, Institute.....	118	53
885	20	A. J. Hutton, expenses, salary, Institute.....	36	16
886	20	C. H. Sylvester, expenses, salary, Institute.....	59	92
887	20	Ober, Cash & Ekstrand, building, Superior.....	660	00
888	20	E. D. Coe, pay-roll, Whitewater.....	2,515	75
889	20	Edna M. Greenfield, salary, clerk, Board.....	45	00
890	20	State Journal Printing Co., exp. Sec'y's office, Board.....	22	50
891	20	E. W. Walker, salary, Institute.....	30	00
892	20	O. Needham, furniture, River Falls.....	25	00
893	20	Mrs. A. W. Flack, misc., River Falls.....	28	13
894	20	The Schumacher Gym. Co., misc., Stevens Point.....	75	68
895	20	Wis. Central Railway, repairs, Stevens Point.....	54	60
896	20	American Book Co., text-books, Stevens Point.....	132	74
897	20	Queen & Co., appar., cab., Stevens Point.....	221	50
898	20	Chas. T. Taylor, misc., Oshkosh.....	12	05
899	20	T. Jenkins, Jr., pay-roll, Platteville.....	2,690	00
900	20	W. F. Grindell & Son, furniture, Platteville.....	86	15
901	20	W. J. Brier, misc., Oshkosh.....	28	13
902	20	Nina C. Vanderwalker, salary, Whitewater.....	30	25
903	20	Frank W. Ostrander, pay-roll, Superior.....	1,835	00
904	20	Mrs. W. H. McDowell, misc., Superior.....	7	92
905	20	A. C. McClurg & Co., text-books, Superior.....	35	10
906	20	Chas. Pittelkow, pay-roll, Milwaukee.....	3,148	00
907	20	A. F. Thompson, pay-roll, Oshkosh.....	3,744	00
908	29	Littlejohn & Kiser, misc., Whitewater.....	112	50

President's Report.

909	20	Elmer & Amend, ap., cab., misc., Oshkosh.....	192 28
910	20	Stark Bros. Co., furniture, Oshkosh.....	53 21
911	20	Manitowoc Seating Co., furniture, Oshkosh.....	47 00
912	20	Ludwig Kumlein, appar., cab., Oshkosh.....	32 30
913	20	Phillip Dugan, repairs, Oshkosh.....	243 58
914	20	A. G. Spaulding & Bro., furniture, Milwaukee.....	144 00
915	20	Ludwig Kumlein, appar., cab., Milwaukee.....	20 25
916	20	C. Meckenhauser, misc., Milwaukee.....	64 59
917	20	H. Mooers Co., repairs, Milwaukee.....	117 75
918	20	Webster Mfg. Co., furniture, Superior.....	141 50
919	20	Mills & Le Claire Lum. Co., misc., Superior.....	1 60
920	20	Superior Water, Light & Power Co., f., l., water rent, Superior.....	110 81
921	20	Brown Bros. Co., misc., Superior.....	168 00
922	20	Telegram Printing Co., ref. books, misc., Superior.....	19 35
923	20	Citizen's Printing Co., stationery, Superior.....	16 50
924	20	Manitowoc Seating Co., furniture, Superior.....	37 50
925	20	Superior Water, Light & Power Co., building, Superior....	32 66
926	20	Silver, Burdette & Co., text-books, Superior.....	2 18
927	20	Lizzie P. Swan, misc., Superior.....	70 00
928	20	Houghton, Mifflin Co., text-books, Superior.....	51 00
929	20	American Book Co., text-books, Superior.....	33 60
930	20	McDonald & Taylor, misc., Superior.....	4 00
931	20	J. N. Patrick, text-books, Superior.....	20 80
932	20	Neil & Co., appar., cab., Superior.....	543 00
933	20	Sweet, Wallach & Co., appar., cab., Superior.....	109 72
934	20	Walmsley, Fuller & Co., appar., cab., Superior.....	71 68
935	20	A. W. Owens, misc., Superior.....	421 80
936	20	Duluth Telephone Co., misc., Superior.....	50 00
937	20	H. L. Chase, fuel and light, Superior.....	47 49
938	20	Henry Heil Chem. Co., appar., cab., Superior.....	17 01
939	20	Sophia Hill, salaries, Superior.....	20 00
940	20	Levi Barkey, misc., Superior.....	7 64
941	Dec. 22	E. D. Coe, pay-roll, Whitewater.....	2,520 50
942	22	A. E. Thompson, pay-roll, Oshkosh.....	3,756 50
943	22	J. O. Raymond, pay-roll, Stevens Point.....	2,306 00
944	22	T. Jenkins, Jr., pay-roll, Platteville.....	2,668 00
945	22	Freeman H. Lord, pay-roll, River Falls.....	2,195 00
946	22	Chas. Pittelkow, pay-roll, Milwaukee.....	3,148 00
947	22	Frank Ostrander, pay-roll, Superior.....	1,835 00
948	22	S. S. Rockwood, expenses Sec'y's office, Board.....	24 13
949	22	S. S. Rockwood salary, Secretary, Board.....	150 00
950	22	Edna M. Greenfield, salary clerk, Board.....	45 00
951	22	Chas. Pittelkow, expenses, service, Board.....	22 50
952	22	Freeman H. Lord, expenses, service, Board.....	101 74
953	22	E. D. Coe, expenses, service, Board.....	64 20
954	22	Frank Ostrander, expenses, service, Board.....	99 13
955	22	L. D. Harvey, expenses, Board.....	4 00
956	22	C. I. King, expert services, Board.....	100 00
957	22	L. E. Amidon, salary, Institute.....	12 00
958	22	S. Y. Gillan, expenses, salary, Institute.....	29 87
959	22	W. H. Cheever, expenses, salary, Institute.....	84 85
960	22	H. Hoovers Co., misc., Milwaukee.....	4 60
961	22	Ludwig Kumlein, appar., cab., Milwaukee.....	12 25
962	22	A. C. McClurg & Co., reference books, Milwaukee.....	52 81
963	22	E. D. Coe, misc., Whitewater.....	854 00
964	22	P. L. Marden, repairs, Oshkosh.....	159 44
965	22	George Young, repairs, Oshkosh.....	65 56
966	22	Oshkosh Decorating Co., repairs, Oshkosh.....	50 86
967	22	John H. Crawford & Co., fuel and light, Oshkosh.....	1,480 23
968	22	Ludwig Kumlein, appar., cab., Oshkosh.....	39 90
969	22	W. H. Crawford, repairs, Oshkosh.....	245 47
970	22	J. O. Emery, reference books, Stevens Point.....	43 50
971	22	R. A. Cook, repairs, Stevens Point.....	7 91
972	22	H. A. Vetter Mfg. Co., repairs, fur., Stevens Point.....	77 06
973	22	Northwestern Furniture Co., fur., Stevens Point.....	92 88
974	22	Ginn & Co., text, ref. books, Stevens Point.....	84 50
975	22	Narragansette Machine Co., misc., appar., cab., Stevens Point.....	22 42
976	22	James Chalmers, misc., Platteville.....	13 05
977	22	Albert Hardy, misc., Platteville.....	23 38
978	22	C. F. Viebahn, misc., Platteville.....	13 65
979	22	J. H. Hafris, misc., Platteville.....	39 00
980	22	Stillwater Mfg. Co., fur., River Falls.....	50 00
981	22	Thomas Martin, fuel and light, River Falls.....	33 69
982	22	E. R. Gustavus, repairs, Oshkosh.....	85 00
983	22	T. Jenkins, Jr., expense, Board.....	35 24

President's Report.

984	22	Walmsley, Fuller & Co., appar., cab., Superior.....	52 00
985	22	Whitall, Tatum & Co., appar., cab., Superior.....	3 75
986	22	W. A. Olmsted Sci. Co., appar., cab., Superior.....	24 88
987	22	W. A. Olmsted Sci. Co., appar., cab., Superior.....	2 67
988	22	W. A. Olmsted Sci. Co., appar., cab., Superior.....	218 53
989	22	J. Q. Emery, text-books, Superior.....	9 00
990	22	Kate L. Sabin, misc., Superior.....	33 55
991	22	B. B. Jackson, misc., Superior.....	12 60
992	22	Lehigh Coal & Coke Co., fuel and light, Superior.....	39 04
993	22	Lehigh Coal & Coke Co., fuel and light, Superior.....	43 16
994	22	Mrs. W. H. McDowell, misc., Superior.....	5 50
995	22	Lizzie P. Swan, misc., Superior.....	45 96
996	22	D. F. Berry, misc., Superior.....	5 00
997	22	Pease-Roach Hardware Co., misc., Superior.....	1 90
998	22	J. A. Trenholm, misc., Superior.....	2 25
999	22	H. E. Holcomb, misc., Superior.....	42 38
1000	22	Heill & Co., misc., Superior.....	11 56
1	22	Strothman Iron Co., misc., Superior.....	1 12
2	22	Edw. L. Seyfried, furniture, Superior.....	5 00
3	22	McMullen Bros., dray line, misc., Superior.....	18 62
4	22	Strothman Iron Co., misc., Superior.....	80
5	22	S. W. Lightbody & Co., furniture, Superior.....	181 85
7	22	Rand, McNally & Co., ref. books, Superior.....	36 67
8	22	Northwestern State Co., appar., cab., Superior.....	186 00
9	22	The Bausch & Lomb Opt. Co., appar., cab., Superior.....	50 18
10	22	Brown, Copeland & Co., misc., Superior.....	6 00
11	22	Hunter & Redmand, building, Superior.....	42 60
12	22	Hunter & Redmand, misc., Superior.....	28 13
13	22	H. F. Gowdin, appar., cab., Superior.....	8 70
14	22	Superior Water, Light & Power Co., water rent, Superior.....	67 15
15	22	Allyn & Bacon, text-books, Superior.....	14 40
16	22	The Prang Educational Co., text-books, Superior.....	9 09
17	22	Ginn & Company, text-books, Superior.....	1 74
18	22	Sheldon & Company, text-books, Superior.....	8 34
19	22	D. C. Heath & Co., misc., Superior.....	1 86
20	22	R. C. Mast, reference books, Superior.....	3 30
21	22	Sophia Hill, salaries, Superior.....	20 00
22	22	Franklin Educational Co., appar., cab., Superior.....	27 55
23	22	H. A. Simonds, misc., Superior.....	27 98
24	22	Franklin Educational Co., misc., Superior.....	16 53
25	22	W. A. Olmsted Scientific Co., appar., cab., Superior.....	30 00
26	22	F. H. Dam & Co., furniture, Superior.....	22 75
27	22	Thomas Charles Co., furniture, Superior.....	5 06
28	22	F. H. Dam & Co., furniture, Superior.....	29 50
29	22	Robert Agrell, misc., Superior.....	11 00
30	22	A. C. McClurg & Co., text-ref. books, Superior.....	738 24
31	22	A. E. Thompson, expense, service, Board.....	150 12
32	22	Fred Borch, misc., Whitewater.....	100 25
1897.			
33	Jan.	Chas. Pittelkow, pay-roll, Milwaukee.....	3,143 00
34	27	H. Mooers Co., repairs, Milwaukee.....	7 65
35	27	Milwaukee Water Works, water rent, Milwaukee.....	18 20
36	27	McIntosh Battery and Optical Co., appar., cab., Milwaukee.....	53 65
37	27	Hilgen Mfg. Co., repairs, Milwaukee.....	253 05
38	27	Ludwig Kuehn, appar., cab., Milwaukee.....	10 25
39	27	S. S. Rockwood, expenses Secretary's office, Board.....	27 79
40	27	S. S. Rockwood, salary, Secretary, Board.....	150 00
41	27	Edna M. Greenfield, salary, clerk, Board.....	45 00
42	27	Democrat Printing Co., expenses Secretary's office, Board.....	3 50
43	27	C. I. King, expert service, Board.....	51 72
44	27	D. McGregor, expenses, salary, Institute.....	44 46
45	27	T. Jenkins, Jr., pay-roll, Platteville.....	2,679 00
46	27	T. Jenkins, Jr., fuel and light, Platteville.....	517 11
47	27	E. D. Coe, pay-roll, Whitewater.....	2,528 00
48	27	Whitewater Water Works, water rent, Whitewater.....	60 75
49	27	A. E. Thompson, pay-roll, Oshkosh.....	3,857 00
50	27	Oshkosh Water Works, water rent, Oshkosh.....	92 50
51	27	Manville Covering Co., repairs, Oshkosh.....	130 20
52	27	Oshkosh Decorating co., repairs, Oshkosh.....	38 52
53	27	J. O. Raymond, pay-roll, Stevens Point.....	2,273 00
54	27	A. G. Green, fuel and light, Stevens Point.....	96 00
55	27	W. H. Elson, misc., Stevens Point.....	28 62
56	27	A. W. Kaler, water rent, River Falls.....	50 00
57	27	Eimer & Amend, appar., cab., River Falls.....	79 05
58	27	C. H. Nye, misc., River Falls.....	30 09
59	27	Thomas Martin, fuel and light, River Falls.....	88 77
60	27	Freeman H. Lord, pay-roll, River Falls.....	2,195 00

President's Report.

61	27	Frank Ostrander, pay-roll, Superior.....	1,835 00
62	27	Ginn & Co., text-books, Superior.....	19 82
63	27	Duplex Mfg. Co., building, Superior.....	161 42
64	27	J. P. Bamfylde, stationery, Superior.....	24 50
65	27	L. Barkey, misc., Superior.....	4 13
66	27	Superior Supply and Fuel Co., fuel and light, Superior.....	71 04
67	27	W. A. Olmsted Scientific Co., appar., cab., misc., Superior..	13 60
68	27	C. P. McDowell, salaries, Superior.....	20 00
69	27	Franklin Educational Co., appar., cab., Superior.....	54 80
70	27	Telegram Printing Co., misc., Superior.....	46 18
71	27	Lizzie P. Swan, misc., Superior.....	70 00
72	27	Mrs. W. H. McDowell, misc., Superior.....	6 25
73	27	U. S. School Furniture Co., furniture, Superior.....	168 00
74	27	Allyn & Bacon, text-books, Superior.....	14 40
75	27	Maynard, Merrill & Co., text-books, Superior.....	9 44
76	27	R. C. Mast, reference books, Superior.....	33 00
77	27	Geo. E. Jacobia, misc., Superior.....	2 32
78	27	Library Bureau, stationery, Superior.....	82 20
79	27	Youghiogheny & Lehigh Coal Co., fuel and light, Superior..	62 50
80	27	Stack Bros., repairs, Superior.....	11 96
81	27	J. F. Chamberlin & Co., misc., Superior.....	12 00
82	27	Lehigh Coal & Coke Co., fuel and light, Superior.....	7 02
83	27	Superior Supply & Fuel Co., misc., Superior.....	27 00
84	27	Superior Supply & Fuel Co., misc., Superior.....	3 00
85	27	Lehigh Coal & Coke Co., fuel and light, Superior.....	53 01
86	27	Edward L. Seyfried, furniture, Superior.....	42 55
87	27	I. C. McNeill, misc., Superior.....	32 61
88	27	Lehigh Coal & Coke Co., fuel and light, Superior.....	42 90
89	27	Superior Water, Light & Power Co., fuel, light, water rent, Superior.....	53 07
90 Feb.	3	E. D. Coe, budget, Whitewater.....	1,582 46
91	3	Chas Pittelkow, budget, Milwaukee.....	1,420 77
92	3	T. Jenkins, Jr., budget, Platteville.....	1,513 01
93	3	James O. Raymond, budget, Stevens Point.....	1,643 08
94	3	Freeman H. Lord, budget, River Falls.....	1,106 61
95	3	A. E. Thompson, budget, Oshkosh.....	2,035 40
96	3	T. Jenkins, Jr., fuel and light, Platteville.....	508 00
97	3	W. H. Davis, repairs, Oshkosh.....	590 21
98	3	F. M. Hasbrouck, repairs, Oshkosh.....	30 72
99	3	Fette & Meryx Coal Co., fuel and light, Milwaukee.....	887 73
100	3	A. C. McClurg & Co., reference books, Stevens Point.....	187 29
101	3	T. B. Pray, misc., Stevens Point.....	61 34
102	3	Scott, Foresman & Co., text-books, Stevens Point.....	67 95
103	3	W. A. Olmstead, appar., cab., Stevens Point.....	72 00
104	3	Manitowoc Seating Co., furniture, Stevens Point.....	78 00
105	3	Ober, Cash & Ekstrand, building, Superior.....	1,000 00
106	3	McGibbon Coal Co., fuel and light, Superior.....	190 39
107	3	Wm. Waters, misc., River Falls.....	75 25
108	3	W. D. Parker, fuel and light, River Falls.....	53 75
109	3	H. F. Sheldrew, fuel and light, River Falls.....	20 13
110	3	Joe W. Maler, fuel and light, River Falls.....	22 75
111	3	W. H. Cheney, fuel and light, River Falls.....	47 30
112	3	Wm. H. Scruton, fuel and light, River Falls.....	40 67
113	3	Eugene Stewart, fuel and light, River Falls.....	65 58
114	3	G. W. Maler, fuel and light, River Falls.....	70 00
115	3	Democrat Printing Co., expenses, Sec'y's office, Board.....	15 50
116	3	Freeman H. Lord, expenses, service, Board.....	82 75
117	3	A. E. Thompson, expenses, service, Board.....	49 91
118	3	E. D. Coe, expenses, service, Board.....	37 25
119	3	Chas. Pittelkow, expenses, Board.....	33 06
120	3	J. J. Fruit, expenses, service, Board.....	26 65
121	3	T. Jenkins, Jr., expenses, service, Board.....	40 14
122	3	James O. Raymond, expenses, service, Board.....	32 55
123	3	Geo. S. Albee, misc., Oshkosh.....	63 07
124	3	L. D. Harvey, misc., Milwaukee.....	13 75
125	3	W. D. Parker, misc., River Falls.....	98 04
126	3	J. O. Emery, expenses, service, Board.....	24 85
127	3	I. C. McNeill, misc., Superior.....	28 55
128	3	A. Salisbury, misc., Whitewater.....	26 25
129	3	W. A. Brown, expenses, service, Board.....	28 25
130	24	S. S. Rockwood, expenses, Sec'y's office, Board.....	7 33
131	24	S. S. Rockwood, salary Sec'y, Board.....	150 00
132	24	Edna M. Greenfield, clerk, salary, Board.....	45 00
133	24	Chas. Pittelkow, pay roll, Milwaukee.....	3,139 00
134	24	L. D. Harvey, fur., ref. books, Milwaukee.....	76 00
135	24	Frank R. Dengel & Co., repairs, Milwaukee.....	50 00
136	24	Frank R. Dengel & Co., repairs, Milwaukee.....	175 00

President's Report.

137	24	Des Forges & Co., ref. books, Milwaukee.....	101 28
138	24	F. A. Plummer & Co., ref. books, Milwaukee.....	77 69
139	24	J. O. Raymond, pay roll, Stevens Point.....	2,306 00
140	24	Lovila M. Mosher, misc., Stevens Point.....	20 78
141	24	W. A. Olmstead Sci. Co., appar., cab., St. Pt.....	28 98
142	24	American Book Co., text books, Stevens Point.....	43 38
143	24	T. Jenkins, Jr., pay roll, Platteville.....	2,679 00
144	24	T. Jenkins, Jr., fuel and light, Platteville.....	335 22
145	24	J. A. Wilgus, misc., Platteville.....	8 40
146	24	E. D. Coe, pay roll, Whitewater.....	2,550 00
147	24	Gust. Wegner, fuel and light, Whitewater.....	249 17
148	24	A. E. Thompson, pay roll, Oshkosh.....	3,838 50
149	24	Crawford Bros., repairs, Oshkosh.....	6 00
150	24	Freeman H. Lord, pay roll, River Falls.....	2,184 00
151	24	O. F. Bergseng, fuel and light, River Falls.....	54 96
152	24	Thomas Martin, fuel and light, River Falls.....	129 10
153	24	Frank Ostrander, pay roll, Superior.....	1,835 00
154	24	Maynard, Merrill & Co., text books, Superior.....	16 88
155	24	American Book Co., text books, Superior.....	12 90
156	24	Tracy, Gibbs & Co., text books, Superior.....	10 00
157	24	E. D. Northrup, repairs, Superior.....	9 00
158	24	The Prang Educational Co., text books, Superior.....	6 20
159	24	D. C. Heath & Co., text books, Superior.....	5 25
160	24	Hunter & Redman, repairs, Superior.....	178 00
161	24	D. C. Heath & Co., text books, Superior.....	30 57
162	24	Superior Water, Light & Power Co., f. l., water rent, Superior.....	42 70
163	24	Standard Oil Co., misc., Superior.....	3 06
164	24	Mrs. W. H. McDowell, misc., Superior.....	4 00
165	24	A. C. McClurg & Co., text books, Superior.....	5 63
166	24	Lizzie P. Swan, misc., Superior.....	52 50
167	24	A. Flannagan, text books, Superior.....	7 20
168	24	A. C. McClurg & Co., text books, Superior.....	14 30
169	24	Clarence P. McDowell, salaries, Superior.....	20 00
170	24	Ginn & Co., text books, Superior.....	78 28
171	24	E. H. Butler & Co., text books, Superior.....	49 63
172	Mch. 24	James O. Raymond, expenses, service, Board.....	26 25
173	24	E. D. Coe, expenses, service, Board.....	64 50
174	24	S. S. Rockwood, expenses Sec'y and office, Board.....	40 98
175	24	S. S. Rockwood, salary Secretary, Board.....	150 00
176	24	Edna M. Greenfield, salary clerk, Board.....	45 00
177	24	Wyckoff, Seamans & Benedict, exp. Sec'y office, Board.....	6 50
178	24	State Journal Printing Co., exp. Sec'y's office, Board.....	51 50
179	24	D. McGregor, expenses, salary, Institute.....	40 02
180	24	W. H. Cheever, expenses, salary, Institute.....	28 73
181	24	A. J. Hutton, expenses, salary, Institute.....	83 86
182	24	E. D. Coe, pay roll, Whitewater.....	2,462 00
183	24	Gust. Wegner, fuel and light, Whitewater.....	117 78
184	24	J. O. Raymond, pay roll, Stevens Point.....	2,306 00
185	24	Bausch & Lomb Opt. Co., appar., cab., misc., St. Pt.....	42 68
186	24	R. A. Cook, fuel and light, Stevens Point.....	526 64
187	24	R. C. Haase, furniture, Stevens Point.....	148 20
188	24	D. C. Heath & Co., text books, Stevens Point.....	72 16
189	24	Houghton, Mifflin & Co., text books, St. Pt.....	56 81
190	24	Ginn & Co., text books, Stevens Point.....	44 04
191	24	T. Jenkins, Jr., pay roll, Platteville.....	2,657 00
192	24	T. Jenkins, Jr., fuel and light, Platteville.....	253 91
193	24	Albert Hardy, misc., Platteville.....	23 20
194	24	Chas. Pittelkow, pay roll, Milwaukee.....	3,073 00
195	24	Lizzie P. Swan, misc., Milwaukee.....	70 00
196	24	The Bruss-Ritter Co., furniture, Milwaukee.....	137 50
197	24	H. Mooers Co., repairs, Milwaukee.....	68 96
198	24	A. E. Thompson, pay roll, Oshkosh.....	3,829 50
199	24	J. D. Carrm, stationery, Oshkosh.....	51 45
200	24	John H. Crawford & Co., fuel and light, Oshkosh.....	942 20
201	24	E. R. Gustavus, repairs, Oshkosh.....	14 40
202	24	Ludwig Kumlein, appar., cab., Oshkosh.....	31 75
203	24	Ludwig Kumlein, appar., cab., Oshkosh.....	38 10
204	24	Ludwig Kumlein, appar., cab., Oshkosh.....	34 00
205	24	Freeman H. Lord, pay roll, River Falls.....	2,177 00
206	24	W. D. Parker, fuel and light, River Falls.....	122 26
207	24	James A. Sheridan, misc., River Falls.....	28 04
208	24	Frank Ostrander, pay roll, Superior.....	1,825 00
209	24	I. C. McNeill, appar., cab., misc., Superior.....	30 84
210	24	Hunter & Redman, furniture, Superior.....	76 75
211	24	Maynard, Merrill & Co., text books, Superior.....	5 40
212	24	F. H. Dam, furniture, Superior.....	42 75

President's Report.

213	24	A. C. McClurg & Co., text books, Superior.....	23 50
214	24	American Book Co., text books, Superior.....	12 40
215	24	Eimer & Amend, appar., cab., Superior.....	125 69
216	24	Nell & Co., repairs, Superior.....	14 43
217	24	Lake Superior Supply Co., fuel, light, Superior.....	84 63
218	24	A. E. Hilmes, repairs, Superior.....	38 75
219	24	Stack & Co., misc., Superior.....	8 92
220	24	L. Barkey, misc., Superior.....	3 11
221	24	Superior Water, Light & Power Co., f. l., Superior.....	63 92
222	24	Lehigh Coal & Coke Co., fuel and light, Superior.....	60 59
223	24	Evening Telegram, sta., misc., Superior.....	42 50
224	24	W. A. Olmsted Scl. Co., appar., cab., Superior.....	28 73
225	24	Spicer Fanning Co., furniture, Superior.....	4 25
226	24	Strothman Iron Co., repairs, Superior.....	85 00
227	24	American Book Co., text books, Superior.....	146 10
228	24	D. C. Heath & Co., text books, Superior.....	10 50
229	24	Maynard, Merrill & Co., text books, Superior.....	14 28
230	24	Henry Holt & Co., text books, Superior.....	22 59
231	24	Mrs. W. H. McDowell, misc., Superior.....	7 31
232	24	C. P. McDowell, salaries, Superior.....	20 00
Apr. 20	20	Milwaukee Water Works, water rent, Milwaukee.....	122 02
234	21	Edna M. Greenfield, salary clerk, Board.....	46 00
235	21	A. E. Thompson, expenses, service, Board.....	24 55
236	21	James Chalmers, misc., Platteville.....	73 80
237	21	F. H. Lord, expenses, service, Board.....	89 69
238	21	W. D. Parker, misc., River Falls.....	16 25
239	21	Albert Salisbury, misc., Whitewater.....	11 63
240	21	L. D. Harvey, misc., Milwaukee.....	13 70
241	21	J. Q. Emery, expenses, service, Board.....	15 75
242	21	Chas. Pittelkow, expense, service, Board.....	39 28
243	21	Frank Ostrander, expense, service, Board.....	67 00
244	21	T. Jenkins, Jr., expense, service, Board.....	18 75
245	21	J. J. Fruit, expense, service, Board.....	32 82
246	21	W. A. Brown, expense, Board.....	50 28
247	21	I. C. McNeill, sta., misc., Superior.....	67 80
248	27	S. S. Rockwood, expense, Sec'y's office, Board.....	11 20
249	27	S. S. Rockwood, salary, Sec'y, Board.....	150 00
250	27	A. J. Hutton, expenses, salary, Institute.....	45 14
251	27	Chester W. Smith, expenses, salary, Institute.....	36 44
252	27	W. C. Hewitt, expenses, salary, Institute.....	95 40
253	27	W. H. Cheever, expenses, salary, Institute.....	39 66
254	27	Frank Ostrander, pay roll, Superior.....	1,765 00
255	27	J. P. Bampfyde & Co., sta., Superior.....	13 00
256	27	Sweet, Wallack & Co., sta., Superior.....	9 72
257	27	Superior Supply & Fuel Co., fuel and light, Superior.....	1 25
258	27	McGibbon Coal Co., fuel and light, Superior.....	76 83
259	27	Ohio Coal Co., fuel and light, Superior.....	170 24
260	27	Sup. Water, Light & Power Co., fuel, light, water rent, Superior.....	46 26
261	27	Leach, Shewell & Sanborn, text books, Superior.....	19 80
262	27	Werner Book Company, text books, Superior.....	15 12
263	27	The Morse Co., text books, Superior.....	4 73
264	27	Silver, Burdett & Co., text books, Superior.....	6 19
265	27	A. C. McClurg & Co., text books, Superior.....	17 14
266	27	A. C. McClurg & Co., text books, Superior.....	26 50
267	27	A. R. Heitland, misc., Superior.....	3 25
268	27	Geo. E. Jacobia, misc., Superior.....	1 32
269	27	Superior Hardware Co., misc., Superior.....	40 31
270	27	W. T. Falconer Mfg. Co., misc., Superior.....	14 10
271	27	Kelley & May, furniture, Superior.....	25 50
272	27	Webster Mfg. Co., furniture, Superior.....	33 00
273	27	A. C. McClurg & Co., ref. books, Superior.....	323 71
274	27	C. P. McDowell, salaries, Superior.....	20 00
275	27	James Seaman, appar., cab., Superior.....	65 00
276	27	E. D. Coe, pay roll, Whitewater.....	2,447 00
277	27	Whitewater Water Works, water rent, Whitewater.....	58 17
278	27	Freeman H. Lord, pay roll, River Falls.....	2,160 00
279	27	A. S. Spaulding & Bro., misc., River Falls.....	101 85
280	27	W. D. Parker, fuel and light, River Falls.....	57 82
281	27	A. E. Thompson, pay roll, Oshkosh.....	3,792 00
282	27	Robert Brand & Sons, furniture, Oshkosh.....	82 50
283	27	Oshkosh Water Works, water rent, Oshkosh.....	92 50
284	27	Chas. Pittelkow, pay roll, Milwaukee.....	3,139 00
285	27	J. H. Jenkins, receiver, rei. books, Milwaukee.....	71 85
286	27	Des Forges & Co., text books, Milwaukee.....	63 34
287	27	Lizzie P. Swan, misc., Milwaukee.....	70 00
288	27	Fette & Meyer Coal Co., fuel and light, Milwaukee.....	849 30

President's Report.

289	27	G. E. McDill, pay roll, Stevens Point.....	2,277 25
290	27	A. G. Green, fuel and light, Stevens Point.....	88 00
291	27	E. D. Coe, expenses, service, Board.....	20 05
292	27	T. Jenkins, pay roll, Platteville.....	2,630 00
293	May 14	W. H. Crawford, repairs, Oshkosh.....	77 00
294	14	Gust Wegner, fuel and light, Whitewater.....	147 66
295	14	H. E. Holcomb, repairs, Superior.....	112 70
296	14	T. E. Bucnanan, repairs, Superior.....	39 00
297	26	Edna M. Greenfield, salary clerk, Board.....	45 00
298	26	S. S. Rockwood, salary Secretary, Board.....	150 00
299	26	S. S. Rockwood, expenses, Secretary, Board.....	25 61
300	26	J. Q. Emery, ref. books, Oshkosh.....	14 00
301	26	James Conklin, expense Sec'y's office, Board.....	32 70
302	26	G. E. McDill, pay roll, Stevens Point.....	2,386 00
303	26	E. E. Howell, appar., cab., misc., Stevens Point.....	107 95
304	26	A. C. McClurg & Co., ref. books, Stevens Point.....	110 40
305	26	Chas. Pittelkow, pay roll, Milwaukee.....	3,173 00
306	26	Lizzie P. Swan, misc., Milwaukee.....	61 60
307	26	Frank R. Dengel & Co., repairs, Milwaukee.....	24 05
308	26	Freeman H. Lord, pay roll, River Falls.....	2,166 00
309	26	F. W. Gerould, appar., cab., River Falls.....	32 00
310	26	A. E. Thompson, pay roll, Oshkosh.....	3,846 50
311	26	J. H. Crawford & Co., fuel and light, Oshkosh.....	74 62
312	26	Chas. O. Merica, misc., Oshkosh.....	7 57
313	26	Oshkosh Water Works, water rent, Oshkosh.....	38 25
314	26	Philip Dugan, repairs, Oshkosh.....	85 20
315	26	Ludwig Kumlien, appar., cab., Oshkosh.....	37 00
316	26	Ludwig Kumlien, appar., cab., Oshkosh.....	35 75
317	26	T. Jenkins, Jr., pay roll, Platteville.....	2,690 00
318	26	T. Jenkins, Jr., fuel and light, Platteville.....	165 48
319	26	E. D. Coe, pay roll, Whitewater.....	2,543 00
320	26	Frank Ostrander, pay roll, Superior.....	1,835 00
321	26	C. P. McDowell, salaries, Superior.....	20 00
322	26	A. G. Spaulding & Bro., furniture, Superior.....	7 88
323	62	Thomas Charles Co., misc., Superior.....	4 39
324	26	R. A. McMullen, Dray Line, misc., Superior.....	13 42
325	26	Neil & Co., repairs, Superior.....	14 35
326	26	A. E. Holmes, pres., repairs, Superior.....	228 77
327	26	West Superior Woodworking Co., appar., cab., Superior.....	48 50
328	26	W. A. Olmstead Scientific Co., appar., cab., Superior.....	8 20
329	26	J. B. Colt & Co., appar., cab., Superior.....	10 35
330	26	D. C. Heath Co., text books, Superior.....	3 18
331	26	A. C. McClurg & Co., text books, Superior.....	12 73
332	26	Maynard, Merrill & Co., text books, Superior.....	4 00
333	26	Houghton, Mifflin & Co., text books, Oshkosh.....	75 44
334	June 10	Henry Herman, misc., Milwaukee.....	9,300 00
335	16	S. S. Rockwood, expense Sec'y's office, Board.....	34 23
336	16	A. E. Thompson, pay roll, Oshkosh.....	3,856 00
337	16	Edna M. Greenfield, salary clerk, Board.....	45 00
338	16	Freeman H. Lord, expense, service, Board.....	133 29
339	16	J. Knauber Litno. Co., expense, Sec'y's office, Board.....	15 00
340	16	Journal Printing Co., expense Sec'y's office, misc., W. B.....	14 05
341	16	E. D. Coe, pay roll, Whitewater.....	2,539 00
342	16	The Sentinel Co., misc., Whitewater.....	67 20
343	16	Chas. Pittelkow, pay roll, Milwaukee.....	3,180 00
344	16	J. H. Evans, misc., Milwaukee.....	55 16
345	16	King, Fowle, McGee & Co., printing, Mil.....	192 45
346	16	Lizzie P. Swan, misc., Milwaukee.....	45 77
347	16	E. W. Walker, inc., Institute.....	17 92
348	16	Freeman H. Lord, pay roll, River Falls.....	2, 39 00
349	16	Mrs. Anna M. Flack, misc., River Falls.....	23 98
350	16	S. S. Rockwood, salary, Sec'y, Board.....	150 00
351	16	W. J. Briar, misc., Oshkosh.....	28 68
352	16	Ludwig Kumlien, appar., cab., Oshkosh.....	35 50
353	16	Harpers' Weekly Club, ref. books, Oshkosh.....	25 00
354	16	T. Jenkins, Jr., pay roll, Platteville.....	2,690 00
355	16	Albert Hardy, misc., Platteville.....	19 99
356	16	T. Jenkins, Jr., fuel and light, Platteville.....	45 75
357	16	G. E. McDill, pay roll, Stevens Point.....	2,386 00
358	16	Lovila M. Mosher, misc., Stevens Point.....	16 74
359	16	Bausch & Lomb Opt. Co., appar., cab., St. Pt.....	64 54
360	16	A. G. Green, fuel and light, Stevens Point.....	10 50
361	16	American Book Co., text books, Stevens Point.....	49 52
362	16	A. G. Green, fuel and light, Stevens Point.....	54 25
363	16	Silver, Burdett & Co., text books, Stevens Point.....	28 99
364	16	Educational Pub. Co., ref. books, Stevens Point.....	23 16
365	16	Leach, Shewell & Sanborn, text books, Stevens Point.....	31 60

President's Report.

366	16	Prang Educational Co., text books, Stevens Point.....	54 15
367	16	W. H. Elson, misc., Stevens Point.....	24 12
368	16	Frank Ostrander, pay roll, Superior.....	1,835 00
369	16	Mrs. Mary McDowell, misc., Superior.....	6 75
370	16	Schonweiler Bros., furniture, Superior.....	152 65
371	16	T. E. Buchanan, misc., Superior.....	70 00
372	16	Spicer-Fanning Co., furniture, Superior.....	6 22
373	16	Chase Bros. Co., misc., Superior.....	24 00
374	16	Wm. C. DeLong, misc., Superior.....	32 50
375	16	Kate L. Sabin, misc., Superior.....	30 29
376	16	Chas. H. Nye, misc., Superior.....	28 87
377	16	W. F. Edholm, misc., Superior.....	11 18
378	16	I. C. McNeill, misc., Superior.....	44 75
379	16	Superior Supply & Fuel Co., misc., Superior.....	1 50
380	16	B. B. Jackson, misc., Superior.....	9 90
381	16	C. Hennicke Co., misc., Superior.....	33 99
382	16	T. E. Buchanan, misc., Superior.....	52 60
383	16	H. E. Holcomb, misc., Superior.....	160 73
384	16	W. A. Olmsted Scientific Co., appar., cab., misc., Superior..	9 98
385	16	I. C. McNeill, misc., Superior.....	28 46
386	16	Timothy Caser, furniture, Superior.....	15 00
387	16	Ober, Cash & Ekstrand, repairs, Superior.....	50 33
388	16	C. P. McDowell, salaries, Superior.....	20 00
389	16	Evening Telegram, stationery, Superior.....	65 92
390	16	Ober, Cash & Ekstrand, building, Superior.....	477 55
391	16	State Treasurer, interest on loan, Board.....	255 56
392	16	Henry Gugler Co., expense, Sec'y's office, Board.....	143 50
393	16	Anna Smuh, misc., Platteville.....	48 64
394	16	James A. Sheridan, misc., River Falls.....	29 15
395	16	Maurice Goodman, expense, sec'y's office, Board.....	15 00
396	16	Pette & Meyer Coal Co., fuel and light, Mil.....	139 77
July 14	14	E. D. Coe, budget, Whitewater.....	996 93
397	14	T. Jenkins, Jr., budget, Platteville.....	612 90
398	14	Freeman H. Lord, budget, River Falls.....	1,119 17
399	14	Chas. Pittelkow, budget, Milwaukee.....	1,451 27
400	14	G. E. McDill, budget, Stevens Point.....	1,378 56
401	14	A. E. Thompson, budget, Oshkosh.....	2,380 80
402	14	S. S. Rockwood, expense Sec'y office, Board.....	21 45
403	14	E. D. Coe, expense, service, Board.....	86 75
404	14	A. E. Thompson, expense, service, Board.....	49 15
405	14	Chas. Pittelkow, expense, service, Board.....	69 95
406	14	F. H. Lor., expense, service, Board.....	50 60
407	14	Frank Ostrander, expense, service, Board.....	59 38
408	14	J. J. Fruit, expense, service, Board.....	46 25
409	14	G. E. McDill, expense, service, Board.....	165 08
410	14	T. Jenkins, Jr., expense, service, Board.....	97 25
411	14	J. Q. Emery, expense, service, Board.....	69 80
412	14	L. D. Harvey, expense, misc., Milwaukee.....	5 50
413	14	I. C. McNeill, misc., Superior.....	24 92
414	14	Albert Salisbury, misc., Whitewater.....	41 40
415	14	Albert Salisbury, misc., Board.....	13 05
416	14	W. D. Parker, misc., River Falls.....	37 51
417	14	D. McGregor, misc., Platteville.....	14 75
418	14	G. S. Albee, misc., Oshkosh.....	76 99
419	14	T. B. Pray, misc., Stevens Point.....	61 50
420	14	E. D. Coe, budget, Whitewater.....	230 14
421	14	T. Jenkins, Jr., budget, Platteville.....	808 37
422	14	Evening Wisconsin, expense, Board.....	320 00
423	14	State Journal Printing Co., expense Sec'y office, Board.....	24 76
424	14	W. C. Hewitt, expenses, salary, Institute.....	69 75
425	14	Chas. Meckenhauser, repairs, Milwaukee.....	95 30
426	14	H. A. Adrian, misc., Milwaukee.....	24 22
427	14	Milwaukee Water Wks., water rent, Milwaukee.....	37 88
428	14	Oshkosh Water Works, water rent, Oshkosh.....	92 50
429	14	W. M. Castle, printing, Oshkosh.....	304 25
430	14	Emma G. Saxe, salaries, Oshkosh.....	20 00
431	14	A. C. McClurg, ref. books, Stevens Point.....	45 73
432	14	J. W. Livingston, misc., Stevens Point.....	19 18
433	14	Andrew Rood, printing, Whitewater.....	211 76
434	14	Whitewater Water Works, water rent, Whitewater.....	50 27
435	14	Evening Telegram, stationery, Superior.....	49 05
436	14	Harmon-Whipple Co., stationery, Superior.....	24 35
437	14	J. P. Bampfylde, sta., printing, Superior.....	224 65
438	14	McMullen Bros., misc., Superior.....	13 17
439	14	L. W. Lightbody & Co., misc., superior.....	2 55
440	14		

President's Report.

441	14	Pease, Roach Hdw. Co., misc., Superior.....	2 00
442	14	H. A. Simonds, misc., Superior.....	24 52
443	14	I. C. McNeill, misc., Superior.....	29 79
444	14	American Soap & Chemical Co., misc., Superior.....	4 25
445	14	H. E. Holcomb, repairs, Superior.....	13 75
446	14	Chase Bros. Co., repairs, Superior.....	280 00
447	14	F. E. Buchanan, repairs, Superior.....	10 50
448	14	S. D. Seavey Co., repairs, Superior.....	12 45
449	14	Superior Water, Light & Power Co., f. l. w. r., Superior..	31 62
450	14	Superior Water, Light & Power Co., f. l. w. r., Superior..	35 27
451	14	Silver, Burdett & Co., text books, Superior.....	14 10
Total			\$321,680 82

President's Report.

SCHEDULE

Of Classified Expenditures of the Normal Schools for the year 1896-7 from July 22 to July 14th, Inclusive.

Items.	Mil-waukee.	Oshkosh.	Platteville.	River Falls.	Stevens Point.	Superior	White-water.	Totals.
Apparatus and cabinet	\$636 08	\$642 95	\$93 17	\$226 54	\$716 59	\$5,572 47	\$392 47	\$8,280 27
Building				11 46		32,517 95		32,529 41
Fuel and Light..	2,304 33	2,790 83	2,053 68	871 56	2,179 95	1,531 54	1,494 83	13,226 72
Furniture	582 98	559 79	374 49	139 50	1,028 66	5,848 64	435 50	8,967 56
Miscellaneous ...	*10,630 22	2,028 21	725 74	751 61	1,202 05	5,903 10	1,905 82	23,146 75
Printing	308 12	379 45	546 02	256 30	285 10	317 25	294 30	2,386 54
Reference books.	605 59	391 44	97 16	257 55	784 17	1,605 44	230 93	3,972 28
Repairs	3,257 17	5,925 13	753 84	873 73	2,123 27	1,098 99	627 30	14,659 43
Salaries	31,664 00	38,331 00	26,959 00	22,024 00	23,483 25	18,450 08	25,392 75	186,304 08
Stationery	131 48	913 97	361 29	353 48	276 36	740 03	237 80	3,014 91
Text books	777 25	1,315 64	963 49	666 54	1,454 66	2,712 57	1,218 86	9,109 01
Water rent	232 62	490 75		100 00	409 44	278 66	245 58	1,757 05
Totals	\$51,129 84	\$53,769 16	\$32,927 88	\$26,532 27	\$33,942 00	\$76,576 72	\$32,476 14	\$307,354 01
Expenses of Committees and per diem of members, expenses of the Secretary and his office and of the Board for general purposes							\$4,838 51	
Salary of the Secretary for twelve (12) months							1,800 00	
Cost of Teachers' Institutes:								\$6,638 51
For incidentals							58 57	
For Conductors' expenses							1,666 98	
For Conductors' salaries							5,962 75	
								\$7,688 30
Total expenditures for school year ending July 14th, 1897								\$321,680 82

* Includes \$9,300.00 for real estate.

President's Report.

The following is a detailed list of the vouchers paid during the school year 1897-8, by authority of the Board:

No.	1897 Date.	To whom and for what paid.	Amount.
452	July 15	Bonnett, Bichie & Co., building, Whitewater.....	\$2,866 20
453	28	S. S. Rockwood, salary, Secretary, Board.....	150 00
454	28	Edna M. Greenfield, salary, clerk, Board.....	45 00
455	28	S. S. Rockwood, expenses Secy's office, Board.....	16 53
456	28	G. E. McDill, pay roll, Stevens Point.....	131 00
457	28	Brudick, Armitage & Allen, printing, Stevens Point.....	198 00
458	28	Freeman H. Lord, salaries, River Falls.....	90 00
459	28	Chas. Pittelkow, pay roll, Milwaukee.....	190 00
460	28	C. E. Patzer, miscellaneous, Milwaukee.....	23 00
461	28	Chas. Moebius, repairs, Milwaukee.....	117 00
462	28	B. F. Huntington, miscellaneous, Platteville.....	180 00
463	28	T. Jenkins, Jr., pay roll, Platteville.....	90 00
464	28	C. I. King, repairs, Platteville.....	21 73
465	28	H. Mooers Co., repairs, Platteville.....	2,000 00
466	28	A. E. Thompson, pay roll, Oshkosh.....	210 00
467	28	Ludwig Kumllein, apparatus and cabinet, Oshkosh.....	35 75
468	28	Frank Ostrander, pay roll, Superior.....	118 32
469	28	C. S. Carpenter, fuel, Superior.....	68 75
470	28	American Heating Co., repairs, Superior.....	11 46
471	28	E. D. Coe, pay roll, Whitewater.....	160 00
472	28	Bonnett, Michie & Co., building, Whitewater.....	5,100 00
473	28	John T. Flavin, miscellaneous, Whitewater.....	13 86
474	Aug. 12	H. C. Koch & Co., building, Whitewater.....	500 00
475	Sept. 2	S. S. Rockwood, Secy's salary, Board.....	150 00
476	2	S. S. Rockwood, expense, Secy's office, Board.....	32 66
477	2	Edna M. Greenfield, salary, clerk, Board.....	45 00
478	2	Democrat Printing Co., expense, Secy's office, Board.....	56 50
479	2	State Journal, printing Co., expense, Secy's office, Board..	27 00
480	2	James Conklin, expense, Secy's office, Board.....	30 55
481	2	C. I. King, building, Whitewater, repairs, Platteville.....	162 18
482	2	E. D. Coe, pay roll, Whitewater.....	100 00
483	2	E. G. Barratt, building, Whitewater.....	105 63
484	2	Bonnett, Michie & Co., building, Whitewater.....	5,950 00
485	2	W. H. Halsey, building, Whitewater.....	1,000 00
486	2	Whitewater Elec. Light Co., repairs, Whitewater.....	719 54
487	2	Narragansett Machine Co., furniture, Whitewater.....	295 50
488	2	Manitowoc Seating Co., furniture, Whitewater.....	179 40
489	2	V. S. School Furniture Co., furniture, Whitewater.....	187 37
490	2	Gustav Wernier, furniture, Whitewater.....	74 63
491	2	The Bruss-Ritter Co., furniture, Whitewater.....	37 00
492	2	H. Mooers Co., building, Whitewater.....	1,200 00
493	2	S. S. Steele, repairs, Whitewater.....	78 90
494	2	Whitewater Water Works, water rent, Whitewater.....	20 83
495	2	G. E. McDill, pay roll, Stevens Point.....	131 00
496	2	F. H. Lord, pay roll, River Falls.....	126 00
497	2	F. M. Ulrich, repairs, River Falls.....	68 57
498	2	W. S. Ensign, repairs, River Falls.....	159 60
499	2	R. S. Freeman, repairs, River Falls.....	47 35
500	2	R. Johnson, repairs, River Falls.....	7 68
501	2	D. B. Hyatt, repairs, River Falls.....	23 63
502	2	A. M. Nelson, repairs, River Falls.....	18 00
503	2	John Klein, Jr., repairs, River Falls.....	11 70
504	2	R. N. Jenson, repairs, River Falls.....	7 12
505	2	Stark Bros. Co., furniture, River Falls.....	52 50
506	2	O. W. Newcomb, furniture, River Falls.....	84 20
507	2	Chas. Pittelkow, pay roll, Milwaukee.....	200 00
508	2	J. H. Harris, misc., Milwaukee.....	23 25
509	2	E. C. Nothbohm Co., repairs, Milwaukee.....	440 00
510	2	John T. Miller, repairs, Milwaukee.....	310 00
511	2	A. E. Thompson, pay roll, Oshkosh.....	170 00
512	2	Johnson Elec. Service Co., repairs, Oshkosh.....	160 00
513	2	W. H. Crawford, repairs, Oshkosh.....	35 28
514	2	Ludwig Kumllein, appar., cab., Oshkosh.....	35 25
515	2	Allen & Weidner, stationery, Oshkosh.....	90 00
516	2	T. Jenkns, Jr., pay roll, Platteville.....	90 00
517	2	C. E. Viebahn, misc., Platteville.....	14 30
518	2	H. Mooers Co., repairs, Platteville.....	3,000 00
519	2	Frank Ostrander, pay roll, Superior.....	135 00
520	2	Donlin & Cullen, building, Superior.....	2,403 80
521	2	C. A. Gregory, repairs, Superior.....	5 00

President's Report.

522	2	Superior Supply & Fuel Co., repairs, Superior.....	16 81
523	2	Clarence P. McDowell, repairs, Superior.....	24 48
524	2	Standard Oil Co., repairs, Superior.....	10 64
525	2	Superior Water, Light & Power Co., water rent, Superior..	10 81
526	2	T. E. Buchanan, repairs, Superior.....	113 70
527	2	Superior Water, Light & Power Co., light, w. r., Superior..	41 34
528	2	W. A. Olmsted Scientific Co., misc., Superior.....	202 28
529	2	McGibbon Coal Co., repairs, Superior.....	45 30
530	2	Duluth School Seating Co., furniture, Superior.....	30 40
531	2	Citizens Publishing Co., printing, Superior.....	17 25
532	2	Robert Agrell, repairs, Superior.....	483 00
533	2	F. W. Meisnest, expenses, salary, Institute.....	24 50
534	2	F. W. Meisnest, expenses, salary, Institute.....	52 49
535	2	C. M. Gleason, expenses, salary, Institute.....	45 00
536	2	Geo. C. Shutts, expenses, salary, Institute.....	94 30
537	2	J. E. Riordan, expenses, salary, Institute.....	55 45
538	2	J. E. Riordan, expenses, salary, Institute.....	86 21
539	2	Jno. N. Foster, expenses, salary, Institute.....	46 80
540	2	Walter S. Watson, expenses, salary, Institute.....	52 46
541	2	Albert Hardy, expenses, salary, Institute.....	74 70
542	2	Albert Hardy, expenses, salary, Institute.....	79 15
543	2	Albert Hardy, expenses, salary, Institute.....	76 58
544	2	Albert Hardy, expenses, salary, Institute.....	43 75
545	2	E. C. Wiswall, expenses, salary, Institute.....	79 42
546	2	H. L. Terry, expenses, salary, Institute.....	138 16
547	2	Carrie J. Smith, expenses, salary, Institute.....	45 56
548	2	Cornelia E. Rogers, expenses, salary, Institute.....	48 54
549	2	Cornelia E. Rogers, expenses, salary, Institute.....	43 76
550	2	H. E. Bolton, expenses, salary, Institute.....	40 69
551	2	Albert H. Sanford, expenses, salary, Institute.....	105 63
552	2	Albert H. Sanford, expenses, salary, Institute.....	51 25
553	2	G. E. Pratt, expenses, salary, Institute.....	23 39
554	2	W. L. Morrison, expenses, salary, Institute.....	60 65
555	2	W. L. Morrison, expenses, salary, Institute.....	47 25
556	2	L. D. Harvey, expenses, salary, Institute.....	149 24
557	2	A. J. Hutton, expenses, salary, Institute.....	70 53
558	2	A. J. Hutton, expenses, salary, Institute.....	146 99
559	2	Chas. O. Merica, expenses, salary, Institute.....	91 00
560	2	Wm. H. Leuhr, expenses, salary, Institute.....	63 04
561	2	W. C. Hewitt, expenses, salary, Institute.....	137 65
562	2	W. C. Hewitt, expenses, salary, Institute.....	274 15
563	2	A. E. Brainerd, expenses, salary, Institute.....	40 00
564	2	D. D. Mayne, expenses, salary, Institute.....	59 57
565	2	G. L. Bowman, expenses, salary, Institute.....	55 25
566	2	Geo. Beck, expenses, salary, Institute.....	125 03
567	2	G. E. Culver, expenses, salary, Institute.....	96 16
568	2	John Bille, expenses, salary, Institute.....	44 20
569	2	Wm. F. Sell, expenses, salary, Institute.....	46 69
570	2	Wm. F. Sell, expenses, salary, Institute.....	53 01
571	2	A. A. Upham, expenses, salary, Institute.....	131 07
572	2	C. P. Cary, expenses, salary, Institute.....	64 15
573	2	W. J. Brier, expenses, salary, Institute.....	261 33
574	2	O. J. Schuster, expenses, salary, Institute.....	35 00
575	2	W. J. Pollock, expenses, salary, Institute.....	54 70
576	2	W. J. Pollock, expenses, salary, Institute.....	59 75
577	2	M. H. Jackson, expenses, salary, Institute.....	48 21
578	2	M. H. Jackson, expenses, salary, Institute.....	43 00
579	2	John I. Jegl, expenses, salary, Institute.....	44 60
580	2	E. W. Walker, expenses, salary, Institute.....	78 63
581	2	E. W. Walker, expenses, salary, Institute.....	348 65
582	2	John I. Jegl, expenses, salary, Institute.....	55 00
583	2	John I. Jegl, expenses, salary, Institute.....	52 92
584	2	Joseph Reek, repairs, Oshkosh.....	191 87
585	2	P. L. Marden & Bro., repairs, Oshkosh.....	480 15
586	2	Oshkosh Decorating Co., repairs, Oshkosh.....	315 87
587	2	Delaney Oil & Grease Co., misc., Milwaukee.....	83 55
588	24	Edna M. Greenfield, salary, clerk, Board.....	45 00
589	24	S. S. Rockwood, salary, Sec'y Board.....	150 00
590	24	S. S. Rockwood, expense, Sec'y's office, Board.....	7 90
590	24	S. S. Rockwood, expense, Sec'y's office, Board.....	7 90
591	24	W. J. Brier, expense, salary, Institute.....	212 54
592	24	A. J. Hutton, expenses, salary, Institute.....	66 17
593	24	E. W. Walker, expenses, salary, Institute.....	123 48
594	24	Jno. N. Foster, expenses, salary, Institute.....	32 15
595	24	Albert Hardy, expenses, salary, Institute.....	51 02
596	24	Frank M. Jack, expenses, salary, Institute.....	110 78
597	24	D. McGregor, expenses, salary, Institute.....	138 74

President's Report.

598	24	W. H. Cheever, expenses, salary, Institute.....	293 35
599	24	J. F. Sims, expenses, salary, institute.....	129 75
600	24	C. E. Patzer, expenses, salary, Institute.....	131 58
601	24	Chas. Pittelkow, pay roll, Milwaukee.....	3,479 00
602	24	Hoffman & Baur, repairs, Milwaukee.....	186 75
603	24	E. D. Coe, pay roll, Whitewater.....	2,520 00
604	24	H. Mooers, Co., building, Whitewater.....	800 00
605	24	Geo. Beach, building, Whitewater.....	106 00
606	24	Library Bureau, furniture, Whitewater.....	547 50
607	24	Bonnett, Michle & Co., building, Whitewater.....	2,000 00
608	24	O. B. Williams, repairs, Whitewater.....	259 08
609	24	W. H. Halsey, building, Whitewater.....	200 00
610	24	C. I. King, building, Whitewater, repairs, Platteville.....	31 04
611	24	T. Jenkins, Jr., pay roll, Platteville.....	2,699 00
612	24	H. Mooers Co., repairs, Platteville.....	2,000 00
613	24	F. H. Lord, pay roll, River Falls.....	2,284 00
614	24	Thomas Charles Co., furniture, misc., River Falls.....	158 14
615	24	W. D. Parker, repairs, misc., River Falls.....	85 61
616	24	G. E. McDill, pay roll, Stevens Point.....	2,547 00
617	24	Frank Ostrander, pay roll, Superior.....	1,944 00
618	24	W. A. Rovison, reference books, Superior.....	24 00
619	24	Superior Water, Light & Power Co., light, water rent, Sup.	16 94
620	24	J. F. Chamberlain & Co., stationery, Superior.....	8 60
621	24	Manitowoc Seating Co., furniture, Superior.....	194 60
622	24	Webster Mfg Co., furniture, Superior.....	56 25
623	24	Clarence I. McDowell, salaries, Superior.....	20 00
624	24	F. H. Damm & Co., furniture, Superior.....	28 50
625	24	A. E. Thompson, pay roll, Oshkosh.....	3,889 75
626	24	Cook & Brown Lime Co., fuel, Oshkosh.....	838 68
627	24	Oshkosh Electric Light & Power Co., light, Oshkosh.....	5 29
628	24	Oshkosh Electric Light & Power Co., repairs, Oshkosh.....	141 30
629	24	Oshkosh Gas Light Co., light, Oshkosh.....	19 05
630	24	Ludwig Kumlein, apparatus, cabinet, Oshkosh.....	37 00
631	24	Robert Brand & Sons, furniture, Oshkosh.....	95 00
632	24	The N. Boyington Co., misc., Stevens Point.....	2,500 00
633	26	Sewall A. Peterson, interest on loan, Board.....	635 00
634	26	Edna M. Greenfield, salary clerk, Board.....	45 00
635	26	S. S. Rockwood, expenses, Secretary, Board.....	9 18
636	26	S. S. Rockwood, salary, Secretary, Board.....	150 00
637	26	A. R. Geilfuss, water rent, Milwaukee.....	21 32
638	26	Chas. Pittelkow, pay roll, Milwaukee.....	3,442 00
639	26	John T. Miller, furniture, Milwaukee.....	16 50
640	26	Wis. School Supply Co., furniture, Milwaukee.....	136 70
641	26	Des Forges & Co., reference books, Milwaukee.....	150 05
642	26	Robert Hatfield, reference books, Milwaukee.....	70 20
643	26	Wm. Wright, reference books, Milwaukee.....	18 90
644	26	Fette & Meyer Coal Co., fuel, Milwaukee.....	298 57
645	26	H. Mooers Company, repairs, Milwaukee.....	300 00
646	26	E. C. Nothbohm & Co., repairs, Milwaukee.....	120 00
647	26	The Bruss-Ritter Co., appar., cab., Milwaukee.....	170 00
648	26	A. E. Thompson, pay roll, Oshkosh.....	3,940 00
649	26	Fred Frick, furniture, Oshkosh.....	62 00
650	26	Goodyear Rubber Co., furniture, Oshkosh.....	54 75
651	26	F. M. Hasbrouck, repairs, Oshkosh.....	41 17
652	26	F. M. Hasbrouck, repairs, Oshkosh.....	26 10
653	26	Oshkosh Water Works, water rent, Oshkosh.....	92 50
654	26	Oshkosh Electric Light & Power Co., light, Oshkosh.....	1 81
655	26	Oshkosh Gas Light Co., fuel and light, Oshkosh.....	12 65
656	26	Allen & Weidner, text and reference books, Oshkosh.....	201 53
657	26	Ludwig Kumlein, appar., cab., Oshkosh.....	35 75
658	26	Ludwig Kumlein, appar., cab., Oshkosh.....	36 75
659	26	Eimer & Amend, appar., cab., Oshkosh.....	191 28
660	26	A. C. McClurg & Co., reference books, Oshkosh.....	126 59
661	26	T. Jenkins, Jr., pay roll, Platteville.....	2,680 00
662	26	T. Jenkins, Jr., repairs, Platteville.....	152 44
663	26	H. Mooers Company, repairs, Platteville.....	1,000 00
664	26	H. Kleinhammer, repairs, Platteville.....	382 00
665	26	J. E. Fawcett, repairs, Platteville.....	246 00
666	26	J. A. Henry, repairs, Platteville.....	241 88
667	26	C. I. King, repairs, Whitewater, Platteville.....	40 22
668	26	E. D. Coe, pay roll, Whitewater.....	2,717 00
669	26	W. A. Olmsted Scientific Co., appar., cab., Whitewater.....	19 62
670	26	W. H. Hewitt, appar., cab., Whitewater.....	25 00
671	26	Peter B. Bogart, building, Whitewater.....	115 00
672	26	O. Smothers, building, Whitewater.....	240 65
673	26	H. Mooers Co., building, Whitewater.....	500 00
674	26	Bonnett, Michle & Co., building, Whitewater.....	2,230 80

President's Report.

675	26	W. H. Halsey, building, Whitewater.....	246 70
676	26	Library Bureau, furniture, Whitewater.....	29 00
677	26	Julius Andrae & Sons Co., repairs, Whitewater.....	64 75
678	26	Gus G. Wenzel, repairs, Whitewater.....	97 75
679	26	C. W. Rockwell, repairs, Whitewater.....	14 10
680	26	George Dennis, repairs, Whitewater.....	31 25
681	26	Elias Bonnett, repairs, Whitewater.....	67 43
682	26	Whitewater Waterworks, water rent, Whitewater.....	76 14
683	26	Frank Ostrander, pay roll, Superior.....	21 84
684	26	C. F. Tryon, furniture, Superior.....	175 00
685	26	Spicer Fanning Co., furniture, Superior.....	160 93
686	26	Edward L. Seyfried, furniture, Superior.....	63 28
687	26	Clarence P. McDowell, salaries, Superior.....	20 00
688	26	McGibbon Coal Co., fuel, Superior.....	93 40
689	26	G. E. McDill, pay roll, Stevens Point.....	2,591 00
990	26	A. C. McClurg & Co., reference books, Stevens Point.....	191 60
691	26	Henry Heil Chemical Co., appar., cab., misc., Stevens Point.....	62 21
692	26	Ziegler Electric Co., appar., cab., misc., Stevens Point.....	129 96
693	26	A. G. Green, fuel, Stevens Point.....	76 00
694	25	The Johnson Electric Service Co., repairs, Stevens Point.....	143 00
695	26	B. L. Vaughn, repairs, Stevens Point.....	5 00
696	26	Abb & Jensen, repairs, Stevens Point.....	121 63
697	26	Abb & Jensen, repairs, Stevens Point.....	1,503 60
698	26	Eggleston & Redfield, repairs, Stevens Point.....	445 50
699	26	Conover & Porter, repairs, Stevens Point.....	126 43
700	Oct. 27	R. A. Cook, repairs, Stevens Point.....	315 00
701	27	Freeman H. Lord, pay roll, River Falls.....	2,375 00
702	27	Stark Bros. Company, furniture, River Falls.....	37 00
703	27	W. D. Parker, appar., cab., furniture, repairs, River Falls.....	35 45
704	27	Henry Wolfer, appar., cab., River Falls.....	44 10
705	27	Wyckoff, Seamans & Benedict, expense, Secretary's office, Board.....	73 63
706	27	Joseph Kloeckner, expense, Board.....	12 43
707	27	Freeman H. Lord, expense, service, Board.....	97 87
708	27	H. A. Adrian, expenses, salary, Institute.....	40 00
709	27	W. H. Cheever, expenses, salary, Institute.....	61 94
710	27	J. H. Francis, salary, Institute.....	30 00
711	27	A. J. Hutton, expenses, salary, Institute.....	87 13
712	27	E. C. Perisho, expenses, salary, Institute.....	58 00
713	27	E. C. Perisho, expenses, salary, Institute.....	62 75
714	27	W. H. Schulz, salary, Institute.....	30 00
715	27	J. W. Livingston, expenses, salary, Institute.....	275 40
716	27	W. H. Schulz, expenses, salary, Institute.....	91 97
717	27	Peter Bogart, repairs, Platteville.....	400 00
718	27	Whitewater Lumber Co., fuel, Whitewater.....	1,478 64
719	27	O. B. Williams, light, Whitewater.....	20 00
720	27	J. P. Cutler, building, Whitewater.....	267 00
721	Nov. 24	S. S. Rockwood, Secretary's expenses, Board.....	9 16
722	24	Edna M. Greenfield, salary, clerk, Board.....	45 00
723	24	S. S. Rockwood, salary, Secretary, Board.....	150 00
724	24	A. E. Thompson, pay roll, Oshkosh.....	3,900 00
725	24	The Cook & Brown Lime Co., fuel, Oshkosh.....	149 06
726	24	The Oshkosh Gas Light Co., light, Oshkosh.....	14 78
727	24	Freeman H. Lord, pay roll, River Falls.....	2,375 00
728	24	W. D. Parker, appar., cab., fuel, River Falls.....	22 40
729	24	James G. Biddle, appar., cab., River Falls.....	126 75
730	24	Elmer & Amend, appar., cab., River Falls.....	92 93
731	24	E. D. Coe, pay roll, Whitewater.....	2,617 00
732	24	Hoffman & Bauer, repairs, Whitewater.....	114 76
733	24	H. J. Kock & Co., building, Whitewater.....	81 94
734	24	F. C. Kizer, misc., Whitewater.....	23 40
735	24	Chas. Pittelkow, pay roll, Milwaukee.....	3,455 50
736	24	G. E. McDill, pay roll, Stevens Point.....	2,533 60
737	24	Electric Appliance Co., appar., cab., Stevens Point.....	48 00
738	24	A. G. Green, fuel, Stevens Point.....	45 00
739	24	Frank Ostrander, pay roll, Superior.....	2,075 00
740	24	Superior Water, Light & Power Co., light, water rent, Superior.....	50 45
741	24	Clarence P. McDowell, salaries, Superior.....	20 00
742	24	Sup. Water, Light and Power Co., light, water rent, Superior.....	65 56
743	24	McGibbon Coal Co., fuel, Superior.....	91 70
744	24	Evening Telegram Co., appar., cab., Superior.....	59 00
745	24	T. Jenkins, Jr., pay roll, Platteville.....	2,669 00
746	22	T. Jenkins, Jr., repairs, Platteville.....	3 84
747	22	J. H. Evans, repairs, Platteville.....	265 55

President's Report.

748	22	W. C. Hewitt, expenses, salary, Institute.....	122 11
749	22	W. H. Cheever, expenses, salary, Institute.....	94 68
750	22	A. J. Hutton, expenses, salary, Institute.....	104 97
751	22	Rose C. Swart, expenses, salary, Institute.....	50 60
752	22	Albert Hardy, expenses, salary, Institute.....	23 79
753	22	E. W. Walker, expenses, salary, Institute.....	74 00
754	Dec. 13	A. E. Thompson, expense, service, Board.....	113 53
755	22	Chas. Pittelkow, expense, service, Board.....	110 55
756	22	T. Jenkins, Jr., expense, Board.....	37 00
757	22	E. D. Coe, expense, service, Board.....	22 77
758	22	W. D. Parker, misc., River Falls.....	10 25
759	22	Frank Ostrander, expense, service, Board.....	57 85
760	22	J. J. Fruit, expenses, service, Board.....	13 95
761	22	G. E. McDill, expense, service, Board.....	29 25
762	22	W. A. Brown, expenses, services, Board.....	8 50
763	22	J. Q. Emery, expenses, service, Board.....	5 00
764	22	C. I. King, misc., Whitewater, Platteville.....	120 40
765	22	S. S. Rockwood, Secretary's salary, Board.....	150 00
766	22	S. S. Rockwood, expense office, sal. clerk, Board.....	65 47
767	22	Sunderland & Ostrander, repairs, Superior.....	204 00
768	22	G. E. McDill, fuel, light, misc., Stevens Point.....	227 34
769	22	B. Uhrig Fuel Co., fuel, Milwaukee.....	223 80
770	22	T. Jenkins, Jr., furniture, repairs, Platteville.....	156 40
771	22	C. H. Schnitzler, misc., Platteville.....	127 50
772	22	John McArthur, misc., Platteville.....	127 50
773	22	Wheeler & Tratt, misc., Whitewater.....	27 00
774	22	George W. Steele, misc., Whitewater.....	45 00
775	22	A. E. Thompson, pay roll, Oshkosh.....	3,934 50
776	22	Frank Ostrander, pay roll, Superior.....	2,130 00
777	22	Leona Pinkham, salaries, Superior.....	16 63
778	22	Clarence McDowell, salaries, Superior.....	20 00
779	22	Kelly & May, furniture, Superior.....	85 00
780	22	American Heating Co., repairs, Superior.....	150 83
781	22	Lake Superior Supply Company, fuel, Superior.....	69 16
782	22	Chas. Pittelkow, pay roll, Milwaukee.....	3,304 50
783	22	F. H. Lord, pay roll, River Falls.....	2,343 60
784	22	Thos. Jenkins, Jr., pay roll, Platteville.....	2,715 00
785	22	Adolph Semmern, misc., Platteville.....	12 25
786	22	E. D. Coe, pay roll, Whitewater.....	2,609 00
787	22	W. A. Olmstead Scientific Co., appar., cab., Whitewater..	76 33
788	22	Goodyear Rubber Co., furniture, Whitewater.....	21 81
789	22	L. M. Goodhue & Son, furniture, Whitewater.....	76 14
790	22	G. E. McDill, pay roll, Stevens Point.....	2,574 50
791	22	W. A. Olmstead Scientific Co., appar., cab., misc., Stevens Point	22 97
792	22	The Kny-Scheerer Co., appar., cab., Stevens Point.....	29 50
793	22	S. Y. Gillan, misc., Oshkosh.....	31 11
794	22	J. W. Livingston, expenses, salary, Institute.....	108 16
795	22	State Journal Printing Co., expense, Secretary's office, Board	9 00
796	22	F. H. Lord, expense, service, Board.....	33 80
797	29	John Winn, misc., Whitewater.....	48 00
798	29	John Bonnett, misc., River Falls.....	184 00
1898.			
799	Jan. 26	S. S. Rockwood, salary, Secretary Board.....	150 00
800	26	S. S. Rockwood, expenses, Secretary, salary clerk, Board..	46 65
801	26	Chas. Pittelkow, pay roll, Milwaukee.....	3,634 00
802	26	Buel T. Davis, misc., Milwaukee.....	14 34
803	26	H. Mooers Co., repairs, Milwaukee.....	49 86
804	26	A. B. Geiffuss, water rent, Milwaukee.....	32 20
805	26	A. E. Thompson, pay roll, Oshkosh.....	3,942 00
806	26	Phillip Dugan, repairs, Oshkosh.....	96 37
807	26	E. C. Wiswall, misc., Oshkosh.....	14 44
808	26	John Hughes, misc., Oshkosh.....	950 25
809	26	The Cook & Brown Lime Co., fuel, Oshkosh.....	358 91
810	26	Chicago Engineer Supply Co., misc., Oshkosh.....	20 72
811	26	Oshkosh Gas Light Co., light, Oshkosh.....	43 03
812	26	Frank Ostrander, pay roll, Superior.....	2,130 00
813	26	Lake Superior Supply Co., fuel, Superior.....	189 48
814	26	Cowie Bros., repairs, Superior.....	398 00
815	26	Douglas County Tel. Co., misc., Superior.....	50 00
816	26	Clarence P. McDowell, salaries, Superior.....	20 00
817	26	Freeman H. Lord, pay roll, River Falls.....	2,366 78
818	26	A. G. Spaulding & Bro., furniture, River Falls.....	27 50
819	26	W. H. Sanderson, misc., River Falls.....	16 50
820	26	Joseph M. Smith, misc., River Falls.....	16 50
821	26	A. T. Carroll, misc., River Falls.....	16 50

President's Report.

822	26	C. N. Wiger, misc., River Falls.....	10	30
823	26	Manitowoc Seating Co., furniture, River Falls.....	940	00
824	26	W. D. Parker, fuel, furn., misc., repairs, sta., text books, River Falls.....	1,124	99
825	26	T. Jenkins, Jr., pay roll, Platteville.....	2,719	00
826	26	G. E. McDill, pay roll, Stevens Point.....	2,602	50
827	26	G. E. McDill, fuel, Stevens Point.....	193	61
828	26	W. L. Morrison, misc., Stevens Point.....	10	30
829	26	T. B. Pray, reference books, Stevens Point.....	65	30
830	26	L. W. Wood, misc., Stevens Point.....	13	25
831	26	St. Pt. Lighting Company, light, Stevens Point.....	39	20
832	26	E. D. Coe, pay roll, Whitewater.....	2,629	00
833	26	Whitewater Electric Light Co., light, Whitewater.....	50	11
834	26	Whitewater Water Works, water rent, Whitewater.....	54	03
835	26	H. Mooers Co., building, Whitewater.....	518	00
836	26	E. R. Nichols & Co., repairs, Whitewater.....	88	85
837	26	J. H. Page, misc., Whitewater.....	27	00
838	26	Sprackling & Newell, repairs, Whitewater.....	27	93
839	26	T. H. Goodhue, misc., repairs, Whitewater.....	72	79
840	26	H. J. O'Connor, misc., stationery, Whitewater.....	182	56
841	26	Littlejohn & Kiser, misc., Whitewater.....	27	00
842	Feb. 1	H. Mooers Co., repairs, Milwaukee.....	52	46
843	1	W. A. Olmstead Scientific Co., appar., cab., misc., Mil- waukee.....	99	77
844	1	H. Mooers Co., repairs, Milwaukee.....	74	26
845	1	T. Jenkins, Jr., fuel, Platteville.....	246	55
846	1	H. Kleinhammer, repairs, Platteville.....	102	84
847	2	Chas. Pittelkow, budget, Milwaukee.....	1,581	59
848	2	Frank Ostrander, budget, Superior.....	1,301	57
849	2	Freeman H. Lord, budget, River Falls.....	867	56
850	2	T. Jenkins, Jr., budget, Platteville.....	1,282	91
851	2	A. E. Thompson, budget, Oshkosh.....	1,694	50
852	2	E. D. Coe, budget, Whitewater.....	1,163	72
853	2	G. E. McDill, budget, Stevens Point.....	1,653	40
854	3	T. Jenkins, Jr., text books, Platteville.....	59	19
855	3	H. Mooers Co., repairs, Platteville.....	828	00
856	3	H. Mooers Co., repairs, Platteville.....	17	48
857	3	Des Forges & Co., reference books, misc., Milwaukee.....	195	45
858	3	Stark Bros., furniture, Oshkosh.....	51	43
859	3	Sup. Water, Light & Power Co., light, water rent, Superior.....	66	41
860	3	Sup. Water, Light & Power Co., light, water rent, Superior.....	109	47
861	3	F. L. Murray & Co., repairs, Superior.....	11	94
862	3	McGibbon Coal Co., fuel, Superior.....	295	54
863	3	Superior Hardware Co., misc., Superior.....	82	46
864	3	G. E. McDill, fuel, Stevens Point.....	20	50
865	3	Stevens Point Water Co., water rent, Stevens Point.....	267	15
866	3	W. C. Hewitt, expenses, Institute.....	5	22
867	3	E. W. Walker, expenses, Institute.....	22	50
868	3	Frank Ostrander, expense, service, Board.....	16	50
869	3	A. E. Thompson, expense, service, Board.....	82	45
870	3	J. J. Fruit, expense, service, Board.....	8	75
871	3	E. D. Coe, expense, service, Board.....	31	70
872	3	F. H. Lord, expenses, service, Board.....	89	30
873	3	G. E. McDill, expense, service, Board.....	33	94
874	3	Chas. Pittelkow, expense, service, Board.....	47	64
875	3	T. Jenkins, Jr., expense, service, Board.....	52	56
876	3	J. Q. Eucery, expense, service, Board.....	28	60
877	3	W. A. Brown, expense, service, Board.....	21	90
878	3	I. C. McNeill, misc., Superior.....	35	00
879	3	Geo. S. Albee, misc., Oshkosh.....	30	07
880	3	Duncan McGregor, misc., Platteville.....	13	75
881	3	T. B. Pray, misc., Stevens Point.....	49	05
882	3	L. D. Harvey, misc., Milwaukee.....	8	34
883	3	Albert Salisbury, misc., Whitewater.....	21	57
884	3	W. D. Parker, misc., River Falls.....	44	65
885	3	S. S. Rockwood, expense, office, Board.....	6	83
886	3	T. M. Purtell, expense, office, Board.....	22	50
887	23	S. S. Rockwood, salary Secretary, Board.....	150	00
888	23	S. S. Rockwood, Secretary expense, Board.....	19	93
889	23	Edna M. Greenfield, salary clerk, Board.....	38	25
890	23	Arthur Birch, misc., Platteville.....	13	30
891	23	T. Jenkins, Jr., fuel, Platteville.....	363	45
892	23	T. Jenkins, Jr., pay roll, Platteville.....	2,723	00
893	23	Freeman H. Lord, pay roll, River Falls.....	2,367	60
894	23	The Macmillan Co., text-books, River Falls.....	1	90
895	23	American Book Co., text books, River Falls.....	67	93
896	23	Irwin Shepard, Secretary, text books, River Falls.....	7	50

President's Report.

897	23	D. C. Heath & Co., text books, River Falls.....	23 25
898	23	Leach, Shewell & Sanborn, text books, River Falls.....	52 20
899	23	Democrat Printing Co., text books, River Falls.....	4 64
900	23	Henry Holt & Co., text books, River Falls.....	10 40
901	23	Silver, Burdett & Co., text books, River Falls.....	29 67
902	23	Chas. Scribner's Sons, text books, River Falls.....	8 69
903	23	Ainsworth & Co., text books, River Falls.....	2 76
904	23	C. M. Barnes, text books, River Falls.....	18 42
905	23	Houghton, Mifflin & Co., text books, River Falls.....	15 30
906	23	Longmans, Green & Co., text books, River Falls.....	37 63
907	23	Nils Malburg, fuel, River Falls.....	61 26
908	23	Freeman H. Lord, fuel, River Falls.....	62 36
909	23	Chas. Pittelkow, pay roll, Milwaukee.....	3,457 00
910	23	Fette, Meyer Coal Co., fuel, Milwaukee.....	1,000 62
911	23	Frank A. Ross, pay roll, Superior.....	2,044 00
912	23	W. A. Olmstead Scientific Co., appar., cab., Superior.....	8 58
913	23	W. C. Whitford, misc., Superior.....	21 66
914	23	A. C. McClurg & Co., reference books, Superior.....	186 75
915	23	Clarence P. McDowell, salaries, Superior.....	20 00
916	23	Z. P. Beach, pay roll, Whitewater.....	2,539 00
917	23	Whitewater Water Works Co., water rent, Whitewater....	30 34
918	23	Whitewater Water Works Co., water rent, Whitewater....	20 83
919	23	Whitewater Electric Light Co., light, Whitewater.....	17 28
920	23	D. Leishmann, misc., repairs, Whitewater.....	49 00
921	23	A. C. McClurg & Co., reference books, Whitewater.....	165 40
922	23	G. E. McDill, pay roll, Stevens Point.....	2,621 50
923	23	Northwestern Furniture Co., furniture, Stevens Point....	50 50
924	23	G. E. McDill, fuel, Stevens Point.....	165 50
925	23	R. A. Cook, fuel, Stevens Point.....	1,044 90
926	23	A. E. Thompson, pay roll, Oshkosh.....	3,951 50
927	23	W. H. Davis, repairs, Oshkosh.....	220 30
928	23	Ludwig Kumlain, appar., cab., Oshkosh.....	34 75
929	23	Allen & Weidner, reference books, Oshkosh.....	103 25
930	23	The Cook & Brown Lime Co., fuel, Oshkosh.....	296 62
931	23	Phillip Dugan, repairs, Oshkosh.....	150 00
932	23	Standard School Book Co., text books, Oshkosh.....	7 20
933	23	Oshkosh Water Works Co., water rent, Oshkosh.....	92 50
934	23	Wm. Waters, building, fuel, Oshkosh.....	200 00
935	23	Lake Superior Supply Co., fuel, Superior.....	57 20
936	Mar. 30	Chas. Pittelkow, pay roll, Milwaukee.....	3,457 00
937	30	Jennie L. Breese, salaries, Milwaukee.....	7 60
938	30	Anna H. McNeill, salaries, Milwaukee.....	4 75
939	30	Des Forges & Co., reference books, Milwaukee.....	65 50
940	30	Fette & Meyers Coal Co., fuel, Milwaukee.....	504 23
941	30	G. E. McDill, repairs, Stevens Point.....	162 75
942	30	G. E. McDill, pay roll, Stevens Point.....	2,514 50
943	30	Pfiffner & Rounds Co., repairs, Stevens Point.....	82 00
944	30	G. E. McDill, fuel, Stevens Point.....	13 13
945	30	G. E. McDill, repairs, Stevens Point.....	25 00
946	30	G. E. McDill, fuel, Stevens Point.....	236 00
947	30	Ziegler Electric Co., appar., cab., Stevens Point.....	59 56
948	30	A. E. Thompson, pay roll, Oshkosh.....	3,990 50
949	30	Oshkosh Gas Light Co., fuel, light, Oshkosh.....	23 75
950	30	A. C. McClurg & Co., reference books, Oshkosh.....	137 28
951	30	Oshkosh Gas Light Co., light, Oshkosh.....	27 15
952	30	T. Jenkins, Jr., pay roll, Platteville.....	2,730 00
953	30	C. I. King, repairs, Platteville.....	16 28
954	30	Peter B. Bogart, repairs, Platteville.....	150 00
955	30	T. C. Salt, misc., Platteville.....	24 13
956	30	Emma C. Underwood, misc., Platteville.....	10 04
957	30	T. Jenkins, Jr., fuel, Platteville.....	59 90
958	30	T. Jenkins, Jr., repairs, Platteville.....	75 82
959	30	H. Mooers Company, repairs, Platteville.....	20 60
960	30	Wm. Bachelor, repairs, Platteville.....	45 00
961	30	Neil & Company, misc., Platteville.....	57 00
962	30	Superior Water, Light & Power Co., appar., cab., Superior.	60 00
963	30	Geo. B. Frazer, appar., cab., Superior.....	28 15
964	30	Elmer & Amend, appar., cab., Superior.....	114 60
965	30	Superior Water, Light & Power Co., light, water rent, Superior.....	57 45
966	30	Amelia Sabin, salaries, Superior.....	9 00
967	30	I. C. McNeill, appar., cab., Superior.....	16 67
968	30	Lake Superior Supply Co., fuel, Superior.....	175 51
969	30	F. A. Ross, pay roll, Superior.....	2,165 50
970	30	F. H. Lord, pay roll, River Falls.....	2,336 24
971	30	J. H. Natrass, misc., River Falls.....	31 46

President's Report.

972	30	The Improvement Bulletin, building, River Falls.....	8 66
973	30	The Hicks Printing Co., building, River Falls.....	4 15
974	30	The Journal Printing Co., building, River Falls.....	11 70
975	30	Freeman H. Lord, fuel, River Falls.....	17 26
976	30	American Book Co., text books, River Falls.....	13 75
977	30	S. B. Toby, appar., cab., River Falls.....	2 20
978	30	The Morse Co., text books, River Falls.....	16 24
979	30	J. Q. Emery, reference books, River Falls.....	22 50
980	30	The Inland Pub. Co., text books, River Falls.....	15 00
981	30	Harper & Bros., text books, River Falls.....	9 00
982	30	Ginn & Co., text books, River Falls.....	26 25
983	30	Allyn & Bacon, text books, River Falls.....	6 00
984	30	Wyckoff, Seamans & Benedict, misc., sta., River Falls...	29 37
985	30	American Book Co., text books, River Falls.....	18 23
986	30	Freeman H. Lord, fuel, River Falls.....	99 00
987	30	Freeman H. Lord, fuel, River Falls.....	53 75
988	30	Freeman H. Lord, fuel, River Falls.....	45 15
989	30	Silver, Burdett & Co., text books, River Falls.....	9 00
990	30	Houghton, Mifflin & Co., text books, River Falls.....	100 20
991	30	Ginn & Co., text books, River Falls.....	5 60
992	30	Chas. Scribner's Sons, text books, River Falls.....	15 55
993	30	Longmans, Green & Co., text books, River Falls.....	31 40
994	30	Evelyn S. Mead, misc., River Falls.....	8 14
995	30	A. G. Spaulding & Bro., furniture, River Falls.....	41 41
996	30	F. H. Lord, fuel, River Falls.....	22 58
997	30	S. S. Rockwood, Secretary's expense, Board.....	5 58
998	30	S. S. Rockwood, Secretary's salary, Board.....	150 00
999	30	Edna M. Greenfield, salary clerk, Board.....	45 00
1000	30	Democrat Printing Co., general expenses, Board.....	44 00
1	30	Cook & Brown Lime Co., fuel, Oshkosh.....	368 13
2	30	W. A. Olmsted Sci. Co., ap., cab., Whitewater.....	36 00
3	30	Ginn & Co., text books, River Falls.....	17 76
4	30	Z. P. Beach, pay roll, Whitewater.....	2, 632 08
5	30	J. E. Riordan, misc., Whitewater.....	10 57
6	30	W. H. Halsey, repairs, Whitewater.....	22 00
7	30	Peter Hendrickson, misc., Whitewater.....	5 00
8	30	A. C. McClurg & Co., reference books, Whitewater.....	98 39
9	30	Whitewater Electric Light Co., light, Whitewater.....	10 75
10	30	Manitowoc Seating Co., furniture, Whitewater.....	26 00
11	30	E. W. Walker, ex., sal., Institute.....	48 25
12	30	W. C. Hewitt, ex., sal., Institute.....	33 85
13	30	S. W. Livingston, ex., sal., Institute.....	30 19
14	30	B. B. Jackson, salary, Institute.....	21 00
15	30	A. J. Hutton, ex., sal., Institute.....	78 60
16	30	W. H. Cheever, ex., sal., Institute.....	70 14
17	30	The Sentinel Co., building, River Falls.....	12 60
18	30	Bonnett, Michie & Co., building, Whitewater.....	428 29
19	30	A. B. Guilfuss, water rent, Milwaukee.....	100 66
Apr. 20	27	Edna M. Greenfield, salary clerk, Board.....	45 00
21	27	S. S. Rockwood, salary Secretary, Board.....	150 00
22	27	S. S. Rockwood, Secretary's expenses, Board.....	9 48
23	27	State Journal Printing Co., ex., Secretary's office, Board.....	30 00
24	27	J. Knauber Litho. Co., expense Secretary's office, Board.....	9 00
25	27	Ole Olson, expenses Secretary's office, Board.....	5 00
26	27	A. H. Sage, expenses, salary, Institute.....	59 36
27	27	A. H. Sage, expenses, salary, Institute.....	49 25
28	27	A. H. Sage, expenses, salary, Institute.....	69 52
29	27	A. H. Sage, expenses, salary, Institute.....	57 14
30	27	A. J. Hutton, expenses, salary, Institute.....	38 80
31	27	Albert Hardy, expenses, salary, Institute.....	42 90
32	27	W. C. Hewitt, expenses, salary, Institute.....	82 33
33	27	W. H. Cheever, expenses, salary, Institute.....	33 84
34	27	A. E. Thompson, pay roll, Oshkosh.....	3, 958 00
35	27	Oshkosh Water Works Co., water rent, Oshkosh.....	92 50
36	27	Oshkosh Gas Light Co., light, Oshkosh.....	20 25
37	27	G. E. McDill, pay roll, Stevens Point.....	2, 583 60
38	27	John Rice & Bro. Co., repairs, Stevens Point.....	73 32
39	27	John Rice & Bro. Co., repairs, Stevens Point.....	64 91
40	27	E. E. Howell, appar., cab., Stevens Point.....	250 00
41	27	Frank Abb, repairs, Stevens Point.....	36 00
42	27	S. P. Lighting Co., light, Stevens Point.....	42 31
43	27	Freeman H. Lord, pay roll, River Falls.....	2, 362 80
44	27	Geo. Brumder, building, River Falls.....	16 80
45	27	J. C. Witter Co., appar., cab., River Falls.....	3 25
46	27	Allyn & Bacon, text books, River Falls.....	11 88
47	27	Benj. H. Sanborn & Co., text books, River Falls.....	14 40

President's Report.

48	27	D. C. Heath & Co., text books, River Falls.....	9 48
49	27	D. Appleton & Co., text books, River Falls.....	12 28
50	27	Thomas Charles Co., misc., River Falls.....	16 93
51	27	Bonnett, Michie & Co., building, River Falls.....	5,100 00
52	27	Chas. Pittelkow, pay roll, Milwaukee.....	3,479 00
53	27	Chas. Pittelkow, light, Milwaukee.....	18 34
54	27	A. G. Spaulding & Bros., furniture, Milwaukee.....	50 00
55	27	A. B. Johns, salaries, Milwaukee.....	1 60
56	27	Annie H. McNeill, salaries, Milwaukee.....	4 75
57	27	H. G. Hayden, salaries, Milwaukee.....	17 00
58	27	Allen B. West, misc., Milwaukee.....	23 47
59	27	J. B. Estabrook, misc., Milwaukee.....	13 70
60	27	T. Jenkins, Jr., pay roll, Platteville.....	2,540 50
61	27	Manville Covering Co., repairs, Platteville.....	313 70
62	27	H. Mooers Co., repairs, Platteville.....	64 00
63	27	H. Mooers Co., repairs, Platteville.....	5 20
64	27	W. F. Grindell & Son, furniture, Platteville.....	40 00
65	27	Frank A. Ross, pay roll, Superior.....	2,139 00
66	27	F. H. Dam, furniture, Superior.....	105 00
67	27	McGibbon Coal Co., fuel, Superior.....	118 80
68	27	Kelly & May, furniture, Superior.....	30 60
69	27	A. C. McClurg & Co., ref. books, Superior.....	99 81
70	27	I. C. McNeill, misc., Superior.....	13 30
71	27	Sup. Water, Light & Power Co., light, water rent, Superior.....	71 15
72	27	Sup. Water, Light & Power Co., light, water rent, Superior.....	45 99
73	27	Z. P. Beach, pay roll, Whitewater.....	2,557 00
74	27	W. A. Olmsted Sci. Co., appar., cab., Whitewater.....	44 35
75	27	Whitewater Lumber Co., fuel, Whitewater.....	555 29
76	27	Elias Bonnett, repairs, Whitewater.....	25 50
77	27	Sprackling & Newall, repairs, Whitewater.....	59 61
78	May 24	A. E. Thompson, pay roll, Oshkosh.....	3,954 50
79	24	A. C. McClurg & Co., ref. books, Oshkosh.....	117 49
80	24	Oshkosh Gas Light Co., fuel, light, Oshkosh.....	17 13
81	24	T. Jenkins, Jr., pay roll, Platteville.....	2,690 00
82	24	A. C. McClurg & Co., ref. books, Platteville.....	226 51
83	24	Richards & Co., Limited, appar., cab., Platteville.....	212 05
84	24	A. C. McClurg & Co., ref. books, Platteville.....	56 28
85	24	W. A. Olmsted Scientific Co., appar., cab., Platteville.....	35 59
86	24	Z. P. Beach, pay roll, Whitewater.....	2,555 00
87	24	Z. P. Beach, salaries, Whitewater.....	50 00
88	24	G. W. Dennis, misc., Whitewater.....	52 38
89	24	The Columbia Rubber Works Co., repairs, Whitewater.....	88 15
90	24	Manitowoc Seating Co., furniture, Whitewater.....	37 80
91	24	H. Mooers Co., repairs, Whitewater.....	25 78
92	24	O. B. Williams, light, Whitewater.....	28 79
93	24	Frank A. Ross, pay roll, Superior.....	2,150 00
94	24	Spicer Fanning Co., text books, Superior.....	26 73
95	24	Sup. Water, Light & Power Co., light, water rent, Superior.....	38 98
96	24	Evening Telegram Co., appar., cab., Superior.....	51 55
97	24	Frank B. Headly, salaries, Superior.....	10 00
98	24	Amelia Sabin, salaries, Superior.....	12 00
99	24	The Fred Macey Co., furniture, Superior.....	19 50
100	24	Freeman H. Lord, pay roll, River Falls.....	2,324 55
101	24	Bonnett, Michie & Co., building, River Falls.....	6,100 00
102	24	Charlotte J. Caldwell, appar., cab., River Falls.....	3 00
103	24	American Book Co., text books, River Falls.....	84 34
104	24	Thomas Charles Co., furniture, River Falls.....	22 30
105	24	A. C. McClurg & Co., ref. books, River Falls.....	196 54
106	24	Ginn & Co., text books, River Falls.....	10 24
107	24	Geo. A. Kilbourn, ref. books, River Falls.....	30 00
108	24	A. C. McClurg & Co., ref. books, River Falls.....	5 00
109	24	Silver, Burdett & Co., text books, River Falls.....	6 00
110	24	G. E. McDill, ap., cab., fuel, rep., misc., Stevens Point.....	39 80
111	24	L. W. Wood, misc., Stevens Point.....	10 69
112	24	Crosby Grant, furniture, Stevens Point.....	13 00
113	24	G. E. McDill, pay roll, Stevens Point.....	2,615 00
114	24	Chas. Pittelkow, pay roll, Milwaukee.....	3,460 50
115	24	E. W. Woodford, salaries, Milwaukee.....	36 00
116	24	Chas. Pittelkow, light, Milwaukee.....	14 02
117	24	H. G. Hayden, salaries, Milwaukee.....	4 20
118	24	Fette & Meyer Coal Co., fuel, Milwaukee.....	255 37
119	24	S. S. Rockwood, expense, Sec'y office, Board.....	24 45
120	24	S. S. Rockwood, Secretary's salary, Board.....	150 00
121	24	Edna M. Greenfield, salary clerk, Board.....	45 00
122	June 18	F. A. Ross, pay roll, Superior.....	2,095 00
123	18	Frank B. Headley, salaries, Superior.....	5 00
124	18	McGibbon Coal Co., fuel, Superior.....	53 47

President's Report.

125	18	I. C. McNeill, misc., Superior.....	68 16
126	18	Amella Sabin, salaries, Superior.....	8 00
127	18	W. C. Whitford, misc., Superior.....	26 43
128	18	T. Jenkins, Jr., pay roll, Platteville.....	2,690 00
129	18	J. E. Fawcett, repairs, Platteville.....	350 00
130	18	Arthur Burch, misc., Platteville.....	13 65
131	18	Emma C. Underwood, misc., Platteville.....	12 04
132	18	A. C. McClurg & Co., ref. books, Platteville.....	23 25
133	18	Z. P. Beach, pay roll, Whitewater.....	2,579 00
134	18	E. R. Nichols, repairs, Whitewater.....	25 42
135	18	L. M. Goodhue & Son, furniture, Whitewater.....	25 30
136	18	T. H. Goodhue, misc., Whitewater.....	38 26
137	18	Whitewater Water Works, water rent, Whitewater.....	75 00
138	18	Geo. W. Dennis, salaries, Whitewater.....	52 00
139	18	H. J. O'Connor, misc., sta., Whitewater.....	95 07
140	18	Peter Hendrickson, misc., Whitewater.....	5 75
141	18	A. E. Thompson, pay roll, Oshkosh.....	3,629 00
142	18	G. S. Albee, salaries, Oshkosh.....	175 00
143	18	E. C. Wiswall, misc., Oshkosh.....	15 61
144	18	E. D. Davis, misc., Oshkosh.....	6 50
145	18	Cook & Brown Lime Co., fuel, Oshkosh.....	20 15
146	18	G. E. McDill, pay roll, Stevens Point.....	2,562 50
147	18	Manitowoc Seating Co., furniture, Stevens Point.....	42 00
148	18	Bausch & Lomb Opt. Co., appar., cab., Stevens Point.....	40 22
149	18	Marshall Field & Co., furniture, Stevens Point.....	164 31
150	18	Stevens Point Water Co., water rent, Stevens Point.....	100 00
151	18	Freeman H. Lord, pay roll, River Falls.....	2,350 12
152	18	W. J. Brier, reference books, River Falls.....	9 00
153	18	Freeman H. Lord, fuel, River Falls.....	10 75
154	18	Bonnett, Michie & Co., building, River Falls.....	6,000 00
155	18	James Dunn, building, River Falls.....	48 75
156	18	Chas. Pittelkow, pay roll, Milwaukee.....	3,490 00
157	18	The Concordia Fire Ins. Co., misc., Milwaukee.....	1,257 00
158	18	Annie H. McNeil, salaries, Superior.....	4 25
159	18	E. W. Woodford, salaries, Milwaukee.....	44 00
160	18	Chas. Pittelkow, fuel, lig., Milwaukee.....	12 20
161	18	King, Fowle, McGee & Co., misc., Milwaukee.....	162 05
162	18	Mattie Tomanek, salaries, Milwaukee.....	6 00
163	18	S. S. Rockwood, salary, Secretary, Board.....	150 00
164	18	S. S. Rockwood, expenses, secretary, Board.....	68 42
165	18	Edna M. Greenfield, salary, clerk, Board.....	45 00
166	18	Maurice Goodman, gen. expenses, Board.....	19 50
167	18	J. Q. Emery, expenses, Board.....	31 50
168	July	T. Jenkins, Jr., text books, Platteville.....	44 40
169	13	T. Jenkins, Jr., appar., cab., reference books, Platteville.....	11 20
170	13	A. W. Kemler, misc., Platteville.....	10 05
171	13	J. H. Evans, light, repairs, Platteville.....	29 44
172	13	City of Platteville, water rent, Platteville.....	66 66
173	13	D. McGregor, furniture, Platteville.....	73 50
174	13	Bausch & Lomb Opt. Co., appar., cab., Platteville.....	127 65
175	13	Henry Holt & Co., ref. books, Platteville.....	2 09
176	13	Chicago Calcium Light Co., appar., cab., Platteville.....	50 25
177	13	Chicago Transparency Co., appar., cab., Platteville.....	13 50
178	13	McIntosh Battery & Optical Co., appar., cab., Platteville.....	81 57
179	13	J. L. Nye, appar., cab., Platteville.....	7 20
180	13	Alfred L. Robbins Co., appar., cab., Platteville.....	31 40
181	13	Edwin R. Smith, misc., Stevens Point.....	32 70
182	13	H. A. Vetter Mfg. Co., furniture, Stevens Point.....	52 77
183	13	S. P. Lighting Co., light, Stevens Point.....	63 39
184	13	S. P. Water Co., water rent, Stevens Point.....	100 00
185	13	Sup. Water, Light & Power Co., light, water rent, Superior.....	55 16
186	13	Sup. Water, Light & Power Co., light, water rent, Superior.....	30 39
187	13	R. L. Barton, misc., Superior.....	24 50
188	13	I. C. McNeill, stationery, superior.....	65 00
189	13	Stack & Co., misc., Superior.....	21 65
190	13	Atkinson & Mentzer, appar., cab., River Falls.....	161 72
191	13	Thomas Charles Co., misc., River Falls.....	13 84
192	13	C. Hennecke & Co., appar., cab., River Falls.....	42 98
193	13	Des Forges & Co., ref. books, River Falls.....	53 02
194	13	A. C. McClurg & Co., ref. books, River Falls.....	213 75
195	13	W. D. Parker, appar., cab., ref. books, River Falls.....	26 39
196	13	Bonnett, Michie & Co., building, River Falls.....	4,000 00
197	13	The Tunstead Heating Co., building, River Falls.....	2,500 00
198	13	Julius Andrae Co., building, River Falls.....	300 00
199	13	Whitewater Water Works Co., water rent, Whitewater.....	75 00
200	13	Whitewater Electric Light Co., light, Whitewater.....	22 80
201	13	John S. Roeseler, misc., Whitewater.....	20 90

President's Report.

202	13	Coe & Roethe, printing, Whitewater.....	189 75
203	13	H. Mooers Co., repairs, Whitewater.....	5 25
204	13	Albert Salisbury, stationery, Whitewater.....	59 43
205	13	Oshkosh Gas Light Co., fuel, light, Oshkosh.....	14 98
206	13	Oshkosh Water Works Co., water rent, Oshkosh.....	92 50
207	13	Rochester Optical Co., appar., cab., Oshkosh.....	72 00
208	13	G. S. Albee, misc., Oshkosh.....	13 18
209	13	Keuffel & Esser Co., appar., cab., Oshkosh.....	32 30
210	13	Alvina Bennecke, salaries, Milwaukee.....	1 20
211	13	Mattie Tomanek, salaries, Milwaukee.....	1 60
212	13	E. W. Woodford, salaries, Milwaukee.....	10 00
313	13	Chas. Pittelkow, fuel, light, Milwaukee.....	10 64
214	13	Milwaukee Water Works, water rent, Milwaukee.....	41 80
215	13	State Journal Printing Co., inc., institutes.....	16 00
216	13	E. W. Walker, expenses, salary, institutes.....	146 02
217	13	W. C. Hewitt, expenses, salary, institutes.....	110 90
218	13	E. W. Walker, expenses, salary, institutes.....	148 14
219	13	Democrat Printing Co., general expenses, Board.....	77 70
220	13	Democrat Printing Co., general expenses, Board.....	93 35
221	13	E. W. Keyes, general expenses, Board.....	44 20
222	13	S. S. Rockwood, Secretary's expenses, Board.....	7 44
223	13	Charles Pittelkow, budget, Milwaukee.....	1,464 98
224	13	Frank A. Ross, budget, Superior.....	1,175 57
225	13	Freeman H. Lord, budget, River Falls.....	747 61
226	13	T. Jenkins, Jr., budget, Platteville.....	872 51
227	13	A. E. Thompson, budget, Oshkosh.....	2,432 66
228	13	Z. P. Beach, budget, Whitewater.....	1,002 84
229	13	G. E. McDill, budget, Stevens Point.....	1,496 81
230	13	F. H. Lord, expense, service, Board.....	134 60
231	13	T. Jenkins, Jr., expense, service, Board.....	69 95
232	13	A. E. Thompson, expense, service, Board.....	155 67
233	13	D. McGregor, misc., Platteville.....	14 65
234	13	G. E. McDill, expense, service, Board.....	137 65
235	14	T. B. Pray, misc., Stevens Point.....	55 77
236	14	Frank A. Ross, expenses, service, Board.....	114 45
237	14	Albert Salisbury, misc., Whitewater.....	36 45
238	14	Chas. Pittelkow, expense, service, Board.....	158 27
239	14	I. C. McNeill, misc., Superior.....	19 98
240	14	J. Q. Emery, service, Board.....	33 00
241	14	Z. P. Beach, expense, service, Board.....	27 00
242	14	J. J. Fruit, expenses, service, Board.....	45 10
243	14	C. I. King, building, River Falls.....	74 23
244	14	C. I. King, building, River Falls.....	25 19
245	14	W. L. Morrison, misc., Stevens Point.....	8 50
246	14	M. P. Rindlaub, printing, Platteville.....	200 00
247	14	Evening Telegram Co., printing, Superior.....	219 00
248	14	L. D. Harvey, misc., Milwaukee.....	70 32
249	14	A. C. McClurg & Co., reference books, Stevens Point.....	191 00
250	14	G. E. McDill, appar., cab., furn., rep., Stevens Point.....	65 79
251	14	O. Smothers, repairs, Whitewater.....	60 89
252	14	Anna Barnard, salaries, Whitewater.....	60 00
Total			\$340,623 31

President's Report.

SCHEDULE

Of classified Expenditures of the Normal Schools for the year 1897-8, from July 15 to July 14th, Inclusive.

Items.	Mil-waukee.	Oshkosh.	Platteville.	River Falls.	Stevens Point.	Superior	White-water.	Totals.
Apparatus, and cabinet	\$240 63	\$648 01	\$682 73	\$586 32	\$544 76	\$553 98	\$238 35	\$3,494 78
Building		200 00	36 12	24,208 17		2,403 80	24,521 91	51,370 00
Fuel	2,013 36	1,709 71	674 90	391 40	1,902 26	1,119 69	2,069 93	9,911 28
Furniture	760 67	947 86	264 15	1,388 09	542 41	1,062 86	1,627 30	6,593 34
Light	165 38	152 81	68 17	10 22	144 54	281 41	149 73	972 26
Miscellaneous	2,088 67	1,956 58	896 05	714 89	*3,562 60	817 59	1,051 36	11,087 74
Printing	273 81	82 40	232 60	254 33	247 07	253 75	190 05	1,534 01
Reference books	1,008 64	891 35	334 35	675 32	584 76	880 04	476 09	5,150 55
Repairs	2,138 97	2,196 07	12,251 02	712 52	3,385 62	1,843 40	2,091 35	24,618 95
Salaries	35,191 45	39,644 75	27,005 50	23,701 69	26,012 50	21,488 50	26,376 00	199,420 39
Stationery	280 73	762 21	424 72	594 26	318 87	307 63	355 15	3,043 57
Text books	716 32	1,489 23	946 72	1,773 09	1,146 19	888 99	1,100 00	8,060 54
Water rent	195 98	370 00	66 66		467 15	379 72	352 17	1,831 68
Totals	\$45,074 61	\$51,050 98	\$43,883 69	\$55,010 30	\$39,188 76	\$32,281 36	\$60,599 39	\$327,089 09
Expenses of Committee and per diem of members, expenses of the Secretary and his office, and of the Board for general purposes							\$3,812 94	
Salary of the Secretary for twelve (12) months							1,800 00	
								5,612 94
Cost of Teachers' Institutes:								
For incidentals							\$18 50	
For Conductors' expenses							2,092 78	
For Conductors' salaries							5,810 00	
								7,921 28
Total expenditures for school year ending July 14th, 1898								\$340,623 31

* Includes \$2,500.00 paid for real estate.

President's Report.

In the appendix hereto will be found the biennial reports of the Presidents of the schools which discuss the professional and scholastic interests that are made their special charge. There is abundant evidence of satisfactory progress in them as well as proof of the pressing demand for more ample facilities heretofore set forth in this report. At the close of the last report of the President of this Board occurs the following remark:

"Taken all in all it is evident that the schools are more popular than ever before in their history, and their growth is steady, substantial and wholly satisfactory, that in spite of the very great increase of their facilities during the past two years the demands made upon them still exceed the capacity of buildings, faculties and equipment, and that soon the question must be seriously asked—shall there be a limit placed upon their number and size?"

The statement is as true now as it was then; and your considerate attention, as well as that of the Legislature, is respectfully invited to the facts herein given, and the interests of the Normal School System are hereby commended for solicitous care and generous treatment.

A. E. THOMPSON,
President of the Board.

APPENDIX.

Milwaukee Normal School.

THE NORMAL SCHOOLS OF WISCONSIN.

REPORT OF THE PRESIDENT OF THE MILWAUKEE
NORMAL SCHOOL.

HON. A. E. THOMPSON,

President Board of Normal School Regents.

DEAR SIR: The Biennial Report of the Milwaukee State Normal School for the two years ending August 31, 1898, is herewith respectfully submitted:

Enrollment.

NORMAL DEPARTMENT.	1896-97.	1897-98.
Senior class	137	187
Junior class	223	202
Graduate students		5
	360	394
MODEL DEPARTMENT.		
Seventh and Eighth Grades	35	51
Fifth and Sixth Grades	52	39
Third and Fourth Grades	53	58
First and second Grades	52	41
Kindergarten	46	47
	228	236
Total in all departments	588	630
Total number graduated	108	147

Of the 394 students enrolled during the year just closed, 307 are graduates of Wisconsin high schools having four years' courses. The remaining 87 are graduates from academies having courses equivalent to those of the four years' free high schools; from high schools in other states; from colleges or universities; or were admitted on examination. Of the 307 high school graduates, 285 are from schools on the accredited list of the State University, representing 62 of those schools.

Milwaukee Normal School.

Twenty-two are from the same number of four years' course high schools not on the University list.

During the biennial period just closed the work of the Milwaukee State Normal School has progressed in a satisfactory manner, both as regards increased attendance and the quality of work done by faculty and students.

The enrollment for the year 1895-'96, in the Normal Department, was 267; during the year 1897-'98, it was 394, an increase in two years of 47 per cent.

The attendance during the year 1897-'98 was greater than it should be at any time, outrunning as it did, the capacity of the building to properly accommodate students, and overtaxing the energies of the teaching force in their effort to adapt instruction to individual needs. Unless the attendance is decreased or an increase in room and teaching force is made, there must inevitably be a deterioration in the quality of the work done in the school.

In my biennial report made August 31, 1896, I called attention to the probable continuous growth of the school for some years, and the necessity for action by the Board toward furnishing additional room or limiting the attendance. Action was taken at the February meeting of the Board in '98, to limit the attendance by requiring all students entering the school to pass a satisfactory examination in Arithmetic, Grammar, Geography, and U. S. History as a condition for entrance. It is impossible to tell at this time just what the effect of this requirement will be upon the attendance. It will undoubtedly result in securing a body of students better prepared to do the professional work of the school than we have had heretofore. It is somewhat doubtful whether a fair application of this new rule of the Board will put the proper limits on attendance. It is true that the character of these entrance examinations may be such as to shut out any number of those seeking admission; but when the examinations are made for the purpose of shutting students out of the school, rather than for determining their fitness to do the legitimate work of the school, it is evident that an injustice is done to those who are seeking to fit themselves for work in the public schools, and that the schools are also losers by such

Milwaukee Normal School.

a policy. The injury and loss to all parties concerned is still greater, when the quality of the instruction and training given by the Normal School is lowered, because of too great a disparity between the number of teachers and the number of students. I apprehend that still further action by the Board will be necessary before the problems of attendance, accommodation, and proper training are solved.

The recommendation made in my report two years ago for a differentiation of work in the school was favorably acted upon by the Board, and such differentiation was made one year ago. It is still too early to report what the full results of this change may be. The opportunity to take special training for primary and intermediate work has been eagerly seized by a considerable number of students but none has completed the full line of work offered in this field. Enough has been shown, however, in the way of results to justify this modification of the standard courses.

The crowded condition of the school has rendered it unwise to push the development of the third year's work offered, and no effort has been made to secure students for this course. There is every indication that such a course would be well patronized if facilities could be offered for carrying it on properly.

The work of the Kindergarten Training department has steadily grown in public favor during the past two years. The policy of adhering to rigid requirements for admission to this course, and of discouraging students from entering with any aim lower than that of completing the full course, has justified itself in establishing the confidence of the public in the character of the work done in this department. The Kindergarten is an important factor in public school work if in the hands of thoroughly trained teachers; when in the charge of persons with no general culture and training, and whose sole qualification lies in their mechanical manipulation of the traditional Gift and Occupation material, it is a positive damage to the children, not only immediately but in their subsequent school work.

The requirements of this course in the Milwaukee Normal School are not surpassed in any Kindergarten Training school in the United States.

Milwaukee Normal School.

In each department of the school, the equipment is now adequate for present needs and the work during the past two years has shown steady progress. This is especially true in the direction of unifying the professional work of the different members of the faculty. In too many normal schools the professional work is limited to that done by the professor of psychology and pedagogy, and by the supervisor of practice. The other members of the faculty are teaching academic branches precisely as they would teach them in the high school or college, having little knowledge of, and no interest in the professional work of the school. Such teachers have no place in a Normal School. Such a school is a professional school whose aim is to *train* teachers; if the work done there does not differ from that done in the high school and college, it is not a professional school and there is no excuse for its existence. The work will not be professional when but two or three members of the faculty concern themselves with its professional phases. Proper *training* in the professional work of teaching demands continued, intelligent, unified effort on the part of the entire teaching force, to the end that the person being trained may steadily grow in power and tendency to *do* the right thing for his pupils, at the right time, under ever varying conditions. This demands a knowledge of pedagogical principles and skill in applying these principles, and a fully developed habit of making the application of them consciously at first, unconsciously later.

Good teaching of an academic subject is demanded of the Normal School teacher as a matter of course, but this good teaching is not *training* the student to teach, unless he is led daily to trace back the practice of his teacher to the pedagogical principles upon which that practice is based. As he comes to see how the same pedagogical principle is applied in the teaching of subjects widely different in character, and is exercised in applying it himself under different conditions, his insight into the teaching process grows, and his power to do good teaching, not as a mere imitative process, but directed and guided by his own judgment is developed. It is the necessity for doing this professional work in connection with the academic work which makes it difficult to secure first class teachers for Normal School

Oshkosh Normal School.

work. In many cases, these teachers have to be trained to do this professional work after they have begun their teaching in the Normal School. Whenever a teacher has developed a high order of ability in this professional work, he should be retained if the question of salary is the only one to be considered. Such a teacher is cheap at any salary.

It is a great pleasure for me to testify to the hearty and intelligent cooperation of the members of the faculty, in the attempt to put the professional work of the school on what seems to me to be the proper basis.

Respectfully submitted,

L. D. HARVEY,

President Milwaukee State Normal School.

Milwaukee, Sept., 1898.

REPORT OF THE OSHKOSH NORMAL SCHOOL.

<i>Receipts:</i>			
Book revenues.....	1896-7.	1897-8.	Total.
Appropriations, law	\$2,027 36	\$2,229 74	\$4,257 10
<hr/>			
<i>Expenditures:</i>			
Text-books			\$2,446 31
Reference books.....			660 28
Total			\$3,106 59
<hr/>			
<i>Total enrollment of students:</i>			
Normal.....	1896-7.	1897-8.	
Grammar.....	632	727	
Intermediate.....	111	118	
Second Primary.....	53	66	
First Primary.....	46	50	
	45	39	
Total	887	1,000	
<hr/>			
<i>Number of graduates:</i>			
Elementary.....	1896-7.	1897-8.	Total.
Advanced.....	49	51	100
	55	66	121

Total No. of graduates from each course since the organization of the respective schools, not counting any person twice:

Elementary.....	407
Advanced.....	336

NOTE.—Acting President Briggs says in a letter transmitting the above: "The death of President Albee accounts for the meagerness of this report."

Platteville Normal School.

REPORT OF THE PRESIDENT OF THE PLATTEVILLE
SCHOOL.

HON. A. E. THOMPSON,

President Board of Regents of Normal Schools of Wisconsin:

SIR: In compliance with Art. VIII., Sec. 14, of the by-laws of the Board of Regents, I have the honor to report as follows, for the two years just closed:

Through the munificence of the legislature and the liberality of the Board of Regents the School has, within two years, made substantial improvement in material equipment and in teaching force. A very considerable amount of most valuable apparatus for the use of students has been added. The supply is by no means large, but the selection has been made so carefully and so wisely that opportunities for pursuing studies requiring apparatus for illustration, observation, or experiment are fairly adequate. As a result, a strong stimulus has been given to the study of the Biological and physical sciences. The growing interest, favored by the more ample equipment, is seen in the flourishing biological and Geological Clubs supported by the School. During the year just closed, the School and the community, through the courtesy of these clubs, have been favored with free lectures as follows:

Lake Life, by Dr. E. A. Birge, Univ. of Wis.

The Meaning of Color in Animals, by Prof. W. H. Dudley, Platteville.

Evolution in its Relation to Modern Thought, by Dr. John M. Coulter, Univ. of Chicago.

Some Phases of Paleontology, by Prof. E. C. Perisho, Platteville.

The Aims and Achievements of Modern Biology, by Dr. W. A. Loey, Northwestern Univ.

Early Mining Industry in S. Western Wisconsin, by J. W. Murphy, Esq., Platteville.

Unwritten History in the Industrial Development of the Lead Region, by Hon. J. V. Holman, Platteville.

The Mining Industry as a Factor in the Development of Platteville, by Hon. J. H. Evans, Platteville.

The zeal manifested by members of the school and the interest shown by citizens warrant the belief that the efforts put forth were appreciated and give encouragement for the continuance of this line of work.

Platteville Normal School.

The very substantial and much needed improvements in the building have contributed, not a little, to the general results of comfort, health, and scholarship. The substitution of steam heat for hot air in a large part of the building is an improvement that means much comfort to our students, and the accompanying fan system of ventilation tells still more in improved sanitary conditions and consequent capacity for better work. We hope the time will soon come when similar changes may be made in the remainder of the building. Convenience, comfort, and safety have also been increased by the electric lighting and city water service supplied to the school building. In a short time bath rooms of limited capacity will be at the service of the students and under the control of the Director of the Gymnasium.

Probably the most valuable addition made in the equipment of the school is the large acquisition to the Reference Library. For years the library has been tolerably well supplied with works in English Literature and Pedagogy; the effort more recently has been to enlarge in lines of History and the sciences. Now the library is fairly well balanced, and needs only to be increased by the addition of such works as may from time to time be published and bearing upon the several departments of Normal School work. As investigations progress, sciences develop, and thought advances, new books issue from the press, and the best of these should immediately find a place in the libraries of our schools and colleges.

The school has been strengthened in its teaching force by additions to the membership of the faculty and by a more satisfactory division of work, thus affording better opportunities for emphasizing separate lines of study. Through this process several departments have been greatly strengthened. After all, the most important factor in training under all conditions, and most especially in school life, is the trainer or teacher. The best that any Board of Regents can do for any Normal School is to see that it is furnished with earnest, capable, and inspiring teachers. This the Board has endeavored to do, and the results are shown in the earnestness and professional spirit of the student body.

Platteville Normal School.

The Semi-Centennial Anniversary of the admission of Wisconsin to statehood offered a most favorable opportunity for calling the attention of students to the history and development of our State.

Early in the school year it was decided that each member of the graduating class should prepare a thesis upon some topic of interest in State history. Libraries were ransacked, pioneers interviewed, and schoolmates induced to collect materials that might be of value in the preparation of these compositions. Not a few of the students made visits to points of interest, gathered information from the inhabitants, made surveys and drawings of scenes of noted events, and secured photographs with which to illustrate their theses. Communities represented in the graduating class became especially interested in the work, and many who had in their possession valuable documents relating to territorial times loaned these to the school for the purpose of encouraging the study of our own State history. The School was placed under great obligation to many friends for generous contributions of reminiscences and documents that greatly aided in accomplishing the purpose in view.

Each graduate left with the School a copy of his thesis, and it is the intention, during the ensuing year, to arrange the papers for future use. The perplexing problem of preparing suitable work for graduation ceremonies was for the semi-centennial year happily solved.

For six years the school has kept in touch with the adjoining counties through a system of lectures or extension work connected with the local institutes and lyceums, under the control of the county superintendents and local committees. It is gratifying to observe that in localities where this work has been most largely done, school sentiment seems to have advanced in a marked degree, and ideals with reference to schools and their functions have been elevated.

As evidence of such improvement, the following conditions are observed:—better school accommodations, neater and more cleanly surroundings, teachers with higher qualifications, and a growing disposition on the part of School Boards to be guided in the selection of teachers by the opinion of competent authority.

Platteville Normal School.

Every school should be a center of educational influence, that influence to be active, and extending to a distance proportional to the grade of the school. The ungraded school even has its territory over which it should make its influence felt. It is not sufficient that the teacher make himself felt in the schoolroom, though that is indispensable; he must also exert direct influence in the surrounding region if he would do all for the district that he might do.

This spirit that reaches beyond school limits and school hours has a most wholesome and stimulating effect upon the regular routine of school life.

The membership of the school has passed the limits of comfort and convenience. At no time during the period covered by this report was it possible to furnish seating accommodations to the students of the Normal proper. Yet our young people have uncomplainingly submitted to much discomfort and inconvenience due to the crowded condition of the room and have pursued their work faithfully and willingly. The more advanced classes are now the larger, necessitating an amount of sectioning that taxes the accommodations furnished. Indeed, the building is altogether inadequate to the needs of the school. The following statement of enrollment will give some idea of the room needed for the proper handling of the School.

	1896-7.	1897-8.
Normal	546	446
Preparatory	66	47
Model School	147	180
	759	673
Twice counted	33	15
Actual enrollment	726	658

The seating capacity of the Assembly Room is only 300.

It is but fair to state that the shrinkage for 1897-8 may be accounted for by the more rigid requirements of the Board relating to admissions. In June, 1897, the Diploma of the Board was granted to 53 persons, the Elementary Certificate to 24.

In 1898, the Diploma was granted to 56, and the Elementary Certificate to 21.

Platteville Normal School.

The recent action of the Board making provision for Courses of Study for preparing for Primary, Intermediate, and High School work has met with great favor by the students and many have availed themselves of the advantages thus afforded. It is the duty of teachers to ascertain as soon as may be for what grade a student is best adapted. Teachers should be able also to direct the pupils to such lines of work as will best qualify for what may seem to be their proper professional work. In these days of child study in our Primary grades, we are likely to overlook the equally important pupil study in our advanced grades. Not long after the student enters upon a Course of Study in a Normal School, it should be determined whether or not he is likely to make a successful teacher.

The decision being in the affirmative it should then be ascertained in what grade his success promises to be most pronounced. The modifications already referred to afford opportunities for more complete preparation in lines in accordance with the pupil's preference and natural adaptation.

The school has maintained a Graduate course for two years. In 1896-7 the number in attendance was 5, in 1897-8, it was 13. In this course opportunities are offered for pursuing studies that will give the student an advantage in University courses as well as prepare him for more efficient work in high schools. A fair distribution among the departments of the school is made so that in most of these the student may have from twenty to forty weeks of graduate study. A full year's work is offered to be selected from advanced mathematics, histology, geology, English or French history, psychology, pedagogy, Latin, and vocal music.

The universities have always attracted many of our graduates, and now that the means for preparation are much enlarged, the number will no doubt be materially increased. One of the functions of every school is to stimulate its pupils to seek the benefits to be derived from higher institutions of learning. It is a matter of congratulation that during the year just closed twenty-one of the graduates of the Platteville school were pursuing courses in universities.

Platteville Normal School.

The Platteville school, the oldest in the State, has just completed the thirty-second year of its existence. Time has wrought many changes in the personnel of its governing Board and teaching force. The demands made upon the school have necessitated many changes in the arrangement of the building and not a few additions to accommodate increasing numbers. The equipment of the school has in some measure kept pace with the advancing ideas of what such a school needs. In some particulars school ideals have changed materially during that time. But, at the organization of the school, the purpose was as it still is, to prepare men and women for the important business of teaching. Its ever present purpose is to create in its pupils high ideals of the profession, to equip them in scholarship, to train them in the details of teaching, and to form in them such character that the youth of the State may arise to a higher plane of manhood and womanhood because of the ideals formed in this school. The daily work of the school under the direction of earnest and conscientious instructors, is the chief means to this end. The encouragement received from the Board of Regents and its Committees, the readiness with which the Board has always ministered to the needs of the School and the careful oversight and assistance of the Resident Regent have contributed, each its full share, to the general result.

With most cordial thanks for the many courtesies received from individual members of your Board, its Committees, its President, and its Secretary, I respectfully submit this report.

Very truly yours,

D. MCGREGOR,

President.

Platteville, Aug. 31, 1898.

River Falls Normal School.

REPORT OF THE RIVER FALLS NORMAL SCHOOL.

HON. A. E. THOMPSON,

President of Board of Regents of Normal Schools:

SIR: I submit the report for this school for the biennial period 1896-98, as follows:

Circumstances of unusual character influenced have the school during these two years and they deserve consideration in order to rank the work alluded to in the statistics. In 1894 the sixth school of the State Normal System had been opened at Stevens Point; in 1896 the seventh was opened at Superior; these two schools necessarily encroached upon the territory lying east and north of this school that had previously been tributary to it.

Many of the conductors of teachers' institutes invited to counties contiguous to the River Falls school have during four years been strangers to this school,—this alienation was notably true for Eau Claire, Chippewa and Jackson counties, wherein only one River Falls conductor has appeared in the four year period.

All these conditions have diminished the attendance at this school. The destruction of the house occupied by the school, on the 29th of November, 1897, placed new obstacles to attendance; though in view of physical exposures to students, found in occupying six separate buildings during the seven months remaining after the fire, the attendance was notably regular and advantageous to school progress.

The enrollment is as follows under circumstances recited:

	1896-'97.		1897-'98.	
Normal	16	299	7	258
Preparatory	42		32	
Grammar	32		30	
Intermediate	62		55	
Primary		152		124
Kindergarten				73
Total		451		455

River Falls Normal School.

The number of persons studying the distinct professional branches named is as follows:

	1896-'97.	1897-'98.
Observation.....	155	135
Practice.....	80	86
School Management.....	55	55
School Law.....	39	50
History of Education.....	10	10
Science of Education.....	10	10
Psychology.....	10	9
Total No. weeks of Practice.....	1,553	1,709
The number of graduates has been:		
Elementary course.....	21	30
Higher course.....	9	9

The aggregate number of persons enrolled in the normal classes proper during the entire operation of the school is very near 3,500, and more than ninety per cent. of them have since, during variable periods, been actively related to schools, chiefly as teachers and superintendents.

Some graduates have taken courses at universities and now occupy important positions in faculties of normal schools; others under like preparation, fill chairs acceptably in colleges and universities. Wherever found the members of the alumni have performed the professional duties with dignity and honor alike to themselves and to the institution.

The school has been an influential center for organizing the relatively sparse population of this section of the state, for uniting the peoples of varied nationality, customs and language, and for promoting a purpose of liberal scholarship and of loyal citizenship.

Some of the local events of the past year deserve the attention of the Board. When the destruction of the normal building was realized, the local citizens organized for the purpose of sheltering the school and for caring personally, if necessary, for students; their interest enabled the work of the school to resume within one day. This zeal did not abate until the assurance of a new building was given, and the school was dismissed for the summer vacation. During this trying period the community authorized expenditures of its own funds that made the extemporized building comfortable. It is also just to remark

Stevens Point Normal School.

that during the entire history of the school the local community, though aggregating less than half the population that is likewise immediately contiguous to any sister Normal school, has cheerfully contributed its fees for the tuition of sufficient model pupils for practice and observation of normal students.

It is also a matter of just record that Mrs. Mary Ann Guy of Salina, Kansas, a former resident of River Falls, placed two hundred dollars at the disposal of the President of the faculty, immediately after the fire, to be used for inaugurating manual training when the new building should be occupied. The Board of Regents meantime determined adversely upon the main proposition of expansion of such work in its schools, and the funds were thereupon returned to the giver. Many other persons have made gifts of personal properties that will aid in restoring the line of objects used in illustrative teaching.

I commend the school to the continued favor of the Board and through the Board, to the liberal patronage of the State.

Respectfully submitted,

W. D. PARKER.

River Falls, Wis., July 30, 1898.

REPORT OF THE PRESIDENT OF THE STEVENS
POINT NORMAL SCHOOL.

HON. A. E. THOMPSON,

President Board of Regents of Normal Schools:

SIR: I have the honor to submit herewith the report on the State Normal School at Stevens Point for the biennial period ending August 31, 1898.

ATTENDANCE.

The attendance at this school has increased steadily from the first year of its history. The enrollment has now reached a point where the provision made for the accommodation of students is so inadequate for the most efficient management of the

Stevens Point Normal School.

school that its farther growth must be hindered by the natural limitation of numbers and space. The building as originally constructed was expected to accommodate about two hundred twenty-five Normal students and a practice school of about one hundred twenty-five pupils. The responsiveness shown by the communities from which Stevens Point is most easily reached has lead to the gratifying result of an attendance far exceeding expectations. The actual enrollment and the growth from year to year is shown in the following tabulation:

	Normal.	Prepara- tory.	Total Normal.	Model School.	Grand Total.
1894-5	152	49	201	165	366
1895-6	261	22	283	159	442
1896-7	344	42	395	156	551
1897-8	420	33	460	167	627

It will be seen from the above figures that from the first the attendance in the Model School has been such as to tax our ability to find seating room for the pupils. Moreover, there have been quite constantly some names upon the waiting list of children whose parents were anxious to enter them in the different departments of the Model School, and whose attendance in our practice department would be very welcome.

The attendance in the Normal Department shows steady increase each year, and it is very gratifying to find that this increase is in the upper classes as well as in the earlier years of the course. This will appear from the following table:

	Seniors.	Juniors.	Second year.	First year.	Prepara- tory.	Total.
1894-5	0	24	21	98	49	193
1895-6	6	44	58	144	22	274
1896-7	29	70	82	163	42	386
1897-8	39	93	95	189	33	453

The increase in attendance is thus shown to be well distributed but much more marked in the upper two years of the course. The reason for this will be found by a consideration of the number of High School graduates attending each year:

1895.	1896.	1897.	1898.
34	55	99	135

Stevens Point Normal School.

The annual catalogs show that this large attendance is gathered from about forty counties, in the north central part of the State for the most part, with some scattered attendance from greater distances. A close study of the catalogs of the various schools shows that this attendance has been secured largely from the territory that formerly had few representatives in any of the Normal Schools and that these same counties are sending to other schools as many students as ever, or even more.

PROFESSIONAL TRAINING.

Aside from the instruction in Theory and Art of Teaching and the other professional branches, regularly included in the course of study, the professional training afforded by the school may be gathered from the following statement of the practice teaching for successive years:

	1895.	1896.	1897.	1898.
No. of students who had practice teaching.....	15	57	117	149
No. of weeks of practice.....	215	1,130	1,980	2,554

NEED OF BULDINGS.

From a study of the preceding tables of attendance and a consideration of the limited space in which the faculty of this school are trying to do the work there expressed, the work demanded by the State of Wisconsin and necessary for the proper training of teachers of the children of the State, it will be seen that the question of room is an all important one at Stevens Point. A knowledge of the condition of the finances of the Board of Regents and the increasing calls made by all the schools would lead one to refrain from urging expenditure for which there were no immediate resources. A point has been reached however when it becomes necessary to determine the policy of the State with reference to the growth of this school. Its facilities are now taxed to the utmost. Under authority of the Board of Regents, the lower preparatory class has been discontinued, and unless some new plans may be made, it will be necessary to modify still further the conditions of admission.

Stevens Point Normal School.

I have referred above to the need of additional attendance in the Model School, or as it is better called, the training department. The argument in favor of a strong training department was well put by President Salisbury in his report to the Board, Regents, in 1892. The disadvantage to practicing students of getting their training with small classes while they must meet and take care of large classes in their actual experience as teachers in the public schools, is so manifest that it is one of the most common causes of criticism of the training departments in all the Normal Schools. During the past year the attendance in the Model School was one hundred sixty-seven, while the number of students doing practice teaching during the year was one hundred forty-nine. These practice teachers had charge of two hundred and fifty-five different classes for a period of ten weeks each. A comparison of these figures with the number of children in attendance, especially in view of the fact that it is essential that some of the teaching in the practice department be done by the regular, thoroughly equipped teachers who have charge of the different grades, will show that even if two pupil-teachers are assigned to the same class it is necessary to subdivide the classes to an unfortunate extent. It is also true that the division of classes into small groups involves a further difficulty in finding a place in which they may recite. At the present time we are using for the purpose rooms originally designated as cloak rooms, as living rooms and bed rooms for the janitor, and the rooms designated for reception room and office.

No teacher in the Normal Department has had exclusive occupancy of her room through the day, and several teachers have been obliged to hear their classes in different rooms. The serious result is not so much the inconvenience of pupil or teacher, as the impossibility of providing for these frequent personal conferences so valuable to the pupil.

It may be proper to recall an extract from the report of the Visiting Committee in 1896: "In this connection your committee takes the liberty to make urgent appeal to the Board of Regents for more room both inside and outside of the building."
. . . "One of the strongest commendations for the school is

Stevens Point Normal School.

the fact that the attendance is already so large that the building accommodations are inadequate to the pressing needs of the school." . . . "There seems also to be a lack of room for the regular recitation work. It was noticed that in several instances one room served the needs of two or more departments. Instead of each department having a permanent room for recitation work, some of them were shifted from place to place to occupy rooms vacated by other departments. In branches where laboratory work is necessary this arrangement is very inconvenient and interferes with the efficiency of the work. . . . Your committee fails to see how this work can be carried on with any degree of satisfaction or efficiency with the present accommodations — three small model school-rooms with one recitation room each. . . . Your committee most respectfully calls the attention of the Board of Regents to the above conditions and considers it quite imperative that more room be provided at an early date either by an addition to the present building or by the erection of a new building."

Again in 1898 the Visiting Committee used the following expression: "From the examination of reports of visitors to other Normal Schools, we note the common 'urgent demand' upon the Board of Regents for 'more room' and an 'increased teaching force.' However formal this may be does not appear to your committee. It is probable that all our normals are overcrowded; yet it is the unanimous verdict of the committee that the Normal at Stevens Point *must* have more room and more teachers or the progress and enthusiasm of the school will be seriously impeded.

"The committee found the building crowded far beyond its capacity, with temporary recitation rooms occupied in dark corners of the basement as well as in the attic. Neither the attic nor the basement is a suitable or safe place for recitation work. We do not believe our State is so poor nor her school resources so limited that it is necessary to use either of these unsuitable places to accommodate the operations of the school."

It has become therefore a question for present consideration whether the interests of the State would be best served by raising the standard of admission at Stevens Point so as to restrict

Stevens Point Normal School.

attendance to less than the present number; or by expanding its equipment, allow its advantages to be enjoyed by a larger number of teachers and especially by those who will teach in the common schools.

COURSES OF STUDY.

Within the last few years there has been a marked change in the courses of study offered to Normal students. Ample provision has been made for study of certain selected sciences or for a study of other languages than English, so that students seeking to prepare themselves for service in the graded and high schools of the state might find suitable preparation. For those students who take the full four years' course ample opportunity is given for professional study, for training through practice teaching and for extension of their study through higher academic branches. It has always been true of the Normal Schools of this State that a large proportion of the students supported themselves in whole or in part by their own exertions. This resulted in their frequently withdrawing from school to teach and it was the common rule that nearly every member of a senior class had actual experience in teaching before graduating. From this experience came a maturity of judgment that was an important factor in determining the value for them of professional studies. In view of the large number of high school graduates entering the Normal School many of whom have no experience in teaching and are therefore in experience and years less fitted to deal with serious problems of school management, it is worth considering whether farther variation in the courses should be recommended. It is quite possible that the interests of the students would be as well served by providing more extended study of the common branches and more professional training with less attention to reviews in those branches of study which are pursued in the latter years of the high school courses.

Moreover, if the diplomas now issued by the Normal School might be varied sufficiently to represent in a general way at least for what grade of school the student has been preparing, possibly the same result or one equally desirable would be reached. At present there is no distinction in the diploma

Stevens Point Normal School.

offered, between the student who has specialized in science with direct reference to work in High Schools and the student whose course has been shaped toward service in Primary grades exclusively. In the courses there is a large provision for variation to fit these cases different and there should be some advantage in having the diploma fit the several courses more definitely. By this means the student who had chosen to prepare herself for Primary or Intermediate grades, through election of pedagogy and professional training, in preference to advanced science and economics, might bear a certificate testifying to that fact.

DISTRIBUTION OF GRADUATES.

In considering whether Normal Schools are properly called local schools the mistake is often made of looking at the counties from which students come rather than at those counties in which they do their teaching after graduating from a Normal School. The students of this school have been drawn from some forty odd counties from the common schools and from about fifty different High Schools, and the counties which send the largest number of students are several of them much farther away from Stevens Point than some adjoining counties having a smaller number, and yet it is not to be supposed that either the communities nearest to Stevens Point or the counties from which students come are the ones which necessarily receive the greatest benefit from the maintenance of this school by the State. This question is rather to be answered by finding out to what county the student goes. It appears from the records that of the fifty-five persons holding certificates or diplomas from this school who were teaching last year, only twenty-one were teaching in the county from which they entered the school, and several of those were not teaching in the school from which they came. Students from Barron county were teaching in Waupaca and Dane; from Vernon county in Portage, Wood and La Crosse; from Portage county in Sheboygan, Dane and Douglas. I am inclined to think that an examination of the facts with reference to the other Normal Schools of the State will show that those counties are most likely to secure the benefit of the school that

Stevens Point Normal School.

take the most pains to secure trained teachers, and that communities remote from the Normal Schools are quite as insistent in their demands for higher qualifications on the part of newly appointed teachers as those localities supposed to be more favored by the location of a Normal School.

THE LIBRARY.

I quote from the report of the Librarian for the past year:

“This year students in all departments have drawn books with the exception of the Primary.

“Provision was made for these by having forty or fifty volumes, especially suited to this grade, placed in the room, which are issued to the children at the discretion of the teacher.

“All books and pamphlets are catalogued up to date and articles relating to this school printed in the Stevens Point Journal and Milwaukee Sentinel, have been cut and preserved.

“That the library is a popular place of resort must be gratifying to all connected with the school, for the constant companionship of books cannot fail to create a love for them in the hearts of young people. Through the courtesy of several young ladies we have been enabled to keep the library open the greater part of the noon hour and this privilege has been appreciated by a large number.

“Not only has the library been used by the school, but citizens and teachers in the public schools, unable to find the material they needed elsewhere, have used the books freely, and assistance tendered them when it did not interfere with our own students.

“Too much cannot be said regarding the kindness and courtesy of all persons connected with the school in their relation to the library. Where so many come and go whose wants and demands are the same, it is most gratifying to feel, that during the entire year no one has been seriously inconvenienced.

ACCESSIONS TO THE LIBRARY.

No. of volumes in the library June, 1897, 4408; total additions during 1897-98, 1015.

No. of volumes in library 23 June, 1898.....	5,409
No. of new students registered this year.....	278

BINDING.

No. of books reset.....	101
No. of books rebound.....	28
No. of books mended in library.....	450
Total	579

Stevens Point Normal School.

SUBSCRIPTIONS.

No. of magazines and papers subscribed for	68
No. of magazines and papers, gifts	30
No. of magazine pictures mounted for circulation.....	40

CIRCULATION.

No. of days library open during the year.....	227
No. of books issued.....	22,852
Largest monthly issue, March, 1898	3,019
Largest weekly issue, 14-19 Feb. 1898.....	808
Largest daily issue, 17 Dec., 1897.....	194
Average daily issue	100

From the beginning it has been felt that the power of the teachers who should go out from this school would depend in no small measure on their ability to use books effectively and upon their love of the best literature, and their ability to interest children in good reading. For this reason especial attention has been devoted to the library to make it attractive and to secure for its shelves those books which in each department were found to be most serviceable and most attractive to the young.

The records show that many volumes are in service almost constantly, and the school has now been in operation long enough so that some of the books included in the earliest purchases have already been duplicated and repaired more than once.

It is believed that no expenditure made by the Board of Regents is more fruitful to good results and it is hoped that the financial resources of the Board will permit the continuance of the policy of frequent additions to the library to keep pace with the growth of the school and to replace volumes worn out by frequent service.

In conclusion, on behalf of all connected with the Stevens Point State Normal School, as teachers or students, I wish to express full appreciation of the pains taken by yourself and your colleagues and your earnest and helpful consideration of all suggestions, for advancing the interests and adding to the efficiency of the school.

Respectfully,

T. B. PRAY,
President.

Stevens Point, Sept., 1898.

Superior Normal School.

REPORT OF THE PRESIDENT OF THE SUPERIOR
SCHOOL.

HOE. A. E. THOMPSON,

President Board of Regents, Oshkosh, Wis.

DEAR SIR: Complying with your request and the regulations of the Board of Regents, I have the honor to submit the following items concerning this school during the first two years of its existence.

The Superior State Normal School, authorized by the State legislature, April 15, 1893, and located April 17, 1895, opened its doors to students on Sept. 8, 1896. The city of Superior and Douglas county as an inducement to make this place the seat of one of your Normal Schools contributed in cash, land, and material the sum of \$103,000. The building, constructed of red sand stone and white brick, covered by a slate roof, contains 33 class and recitation rooms. The accommodations are ample for 150 pupils in the training or model school and 500 in the Normal department. The interior of the building is frescoed and neatly decorated. The walls are tinted with colors restful to the eye while the borders are all of classic Greek design. The entire structure is warmed by steam, supplied by two tubular boilers in the basement. The temperature is regulated throughout by Johnson's patent apparatus. Ventilation is secured by means of two fans. Fresh air, introduced over mass coils, is forced into every room by a powerful intake fan. In the attic is located an exhaust fan which removes the foul air from the rooms.

The Normal School Assembly Hall is seated with tablet-arm opera chairs, on the backs of which are suitable book-racks. The assembly hall can easily accommodate over five hundred students. The school desks are adjustable and afford the greatest physical comfort to pupils and students who occupy them. The laboratories and toilet rooms are supplied with water from the city water-works and drinking water is filtered through germ-proof filters. By your wise plans the building, constructed in the light of modern science, is a model looking to the health and comfort of the individuals who study or teach in it.

Superior Normal School.

The equipment of the building in all of its departments is modern. Great care was exercised in the selection of material with which to work. The science laboratories are well arranged in every detail. Students are expected to use the apparatus themselves, and a sufficient number of pieces are provided to meet that end. The gymnasium is one of the finest rooms of its kind in the United States. It is fairly well equipped. Students of the Normal and pupils in the training department manifest the keenest interest in the work of physical culture. The reference library contains 2,700 volumes of books designed to be helpful to students who are investigating any branch of Normal School work.

The grounds are nicely laid out. Shade trees are planted within the enclosure. A beautiful lawn covers the seven acres of Normal campus; and the State's property in Superior is one of the most attractive spots in northern Wisconsin.

The Training department is under the immediate direction of the Supervisor of Practice and three critic teachers. The work of this department articulates closely with the professional work of the Normal School. One of the causes of friction here is our inability to provide places for all who would enroll in the Training or Model school. At the beginning of the year a waiting list is established; and as vacancies occur applicants are notified and allowed to enter. The first year of the existence of the school withdrawals and new admissions were much more marked than they were last year. Last year when the Model School started out every seat was filled and nearly all who enrolled continued to the end.

Superior affords students who attend this institution rare opportunities to study social and economic conditions, such as are found only in large centers of cosmopolitan population and varied industries. The coal docks, the iron docks, the great ship yards, gigantic flouring mill, grain elevators, saw mills, etc., give pupils a chance to investigate many of the questions that touch our national life. The extensive school systems in this section give students an opportunity to study the work and organization of well conducted city schools. Here are excellent kindergartens, good ward schools and properly equipped high

Superior Normal School.

schools which assist materially in building up right notions of the teacher's profession.

Last year the school was especially fortunate in being able to secure without cost to the students, visits and addresses from some of the most widely known speakers in America. Among the persons from other points who favored the school by their presence, and inspired it by their addresses, are Dr. Eugene May, Bishop John H. Vincent, Miss L. E. Stearns, Pres. W. C. Whitford, Supt. Frank L. Bixby, Supt. R. L. Barton, Dr. W. O. Krohn, W. Hawley Smith, Frederick Warde, Henry Latchford, Prof. Frederick Turner, Thomas Keene, Sec. S. S. Rockwood, and several members of the Board of Regents. A free course of lectures, given by members of the faculty of the Normal School, was well attended. The Woman's Club favored the school with several musical entertainments, in which the history and some of the productions of the great German composers were given. Distinguished resident citizens contributed much to the worth and value of the morning opening exercises by being present and participating.

In northern Wisconsin there is a growing call for trained teachers. School officers of several of the larger towns and cities have recently legislated that none but graduates from one of the several courses of Normal Schools, or the equivalent of such courses, are eligible to places. Rural districts are also demanding that the people who go out to teach the boys and girls shall have some knowledge of the business upon which they propose to enter. Rural school officers are looking to the Normal Schools for such material. About three-fourths of the students of this institution who did not return to school last year entered upon the work of teaching, the greater number of them going to the country schools. Graduates from the regular courses can easily find places. The demand for people of Normal training is great. One of the signs that the State approves the course your honorable Board fosters is the marked preference given to the product of Normal Schools.

The larger part of the clientage of the Superior State Normal School is made up of two classes—high school graduates and teachers of more or less experience. The average age of the

Superior Normal School.

students enrolled in the Normal department last year was about twenty. The first year the preparatory work was done in the Model School. Last year it was carried on in connection with the one year's course for teachers of district schools.

Enrollment for Year Ending June 25, 1897.

Normal department.....	247
Training department:	
Grammar grades.....	65
Intermediate grades.....	70
Primary grades.....	52
Total.....	187
Total.....	434

Enrollment for Year Ending June 17, 1898.

Normal department.....	288
Training department:	
Grammar grades.....	56
Intermediate grades.....	58
Primary grades.....	46
Total.....	160
Total.....	448

Graduates for Year Ending June 25, 1897.

Full course.....	3
Elementary course.....	10
Total.....	13

Graduates for Year Ending June 17, 1898.

Full course.....	16
Elementary course.....	6
Total.....	22

Respectfully submitted,

I. C. McNEIL.

West Superior, Wis., Aug., 25, 1898.

Whitewater Normal School.

REPORT OF THE PRESIDENT OF THE WHITEWATER SCHOOL.

HON. A. E. THOMPSON,

President of the Board of Regents of Normal Schools:

DEAR SIR: I present, according to requirement, the following report of the condition and progress of the Whitewater Normal School for the *biennium* ending August 31, 1898.

In general, it may be said that the condition of the school throughout the period has been prosperous and fortunate. There has been a gradual and healthy growth in the enrollment of students, and a still greater increase in the number of graduates. The teachers have worked together with the zeal and harmony that have always and uniformly characterized the faculty of this school. There are many indications of continued and increasing confidence in the school and its work on the part of the people of the state. The past year, both in number of students and number of graduates, touches the high water mark, surpassing the record of any previous year.

Enrollment.

NORMAL DEPARTMENT.	1896-7.	1897-8.
Post-graduates.....	1	1
Senior class.....	37	50
Junior class.....	66	80
Second year classes.....	87	88
First year classes.....	142	134
Special students.....	3	6
Preparatory class.....	17	25
Totals.....	353	386
Number of ladies.....	245	261
Number of gentlemen.....	108	123
MODEL DEPARTMENT.		
Grammar grades.....	26	27
Intermediate grades.....	40	55
Primary grades.....	61	68
Totals.....	127	150
Total in Normal department.....	353	386
Totals in all departments.....	480	534

Whitewater Normal School.

Sources of membership.

	1896-7.	1897-8.
Admitted on entrance examination.....	38	33
Admitted on high school diplomas	50	57
From 2d and 3d years of high school.....	21	8
On 1st and 2d grade certificates	10	5
Promoted from preparatory department.....	31	20
From other Normal Schools.....	5	3
Miscellaneous	8	12
	163	138

Analysis of these figures, and comparison with those of former reports, shows that the ratio of high school graduates to other students entering is steadily increasing, reaching *41 per cent.* during the past year. Correspondingly, the number entering by way of the Preparatory department is decreasing, dropping to *15 per cent.* of the whole the past year.

Age at Admission.

The average age of those admitted in 1896-7 was.....20 years.
 The average age of those admitted in 1897-8 was.....21 years.
 The average for the last thirteen years is.....19.7 years.

GRADUATION.

The sanction of the school has been granted as follows:

	1896-7.	1897-8.
Certificated (Elementary Course).....	31	49
Graduated (Advanced Course).....	26	43
	57	92

Occupation of Graduates.

(Classes from 1870 to 1898 inclusive.)

Graduated from Advanced Course (men, 115; women, 231).....	346
Have not taught since graduation	10
Still in the teaching profession.....	188
Have completed college or professional courses.....	40
Now in college or university.....	9
Have entered other professions	23
Women who have married and left the profession.....	64
Deceased	23
Completed the Elementary Course only (men, 107; women, 350).....	457
Have not taught since certification.....	36
Are pursuing the Advanced Course.....	23
Have completed college or professional courses.....	14
Still in the teaching profession	234
Men who have entered other professions.....	16
Women who have left the profession by marriage.....	111
Deceased	30

Whitewater Normal School.

IMPROVED FACILITIES FOR WORK.

The outlays made by the Board at this school during the past year have greatly increased the working power of the school. The enlarged Assembly Room and Library, the new Physical and Biological Laboratories, and the improved accommodations for the Model School, along with more commodious cloak-rooms and bath-rooms, have furnished great relief and satisfaction to all concerned. These enlarged quarters have been utilized to their full capacity during the past year.

The provision of an expert librarian has proved of great advantage to the work of the school. Still freer use of the library on the part of the students has resulted, and the students are more generally brought to a true conception of the possibilities of a well-selected library.

PRESENT NEEDS.

While we have been thus liberally dealt with, of late, there remain some urgent needs yet unprovided for.

While the enrollment in our Model School has been considerably increased during the past year, it is still insufficient to afford adequate facilities for practice teaching to the number of advanced students for whom we are called upon to provide such discipline. We had over 120 different practice teachers during the last year. Each of these should have at least 20 weeks of practice teaching. With a Model School of 150 or less, unsatisfactory expedients must be resorted to to meet the above conditions even approximately. The children must not be wholly given over to practice teachers, however good the supervision; and the division of grades into small groups does not furnish normal conditions for practice-work. It seems a necessity, therefore, that we should contemplate the addition, in the near future, of another room to the Model School. This means, also, another teacher for the new room. We have already reached the limit of our resources for practice teaching until such additional facilities are furnished.

There is also pressing need for an additional teacher in the Normal Department. The work in English (Reading, Grammar,

Whitewater Normal School.

Composition, Rhetoric, Literature, Essay Work, &c.) has long been beyond the strength of the two teachers who are charged with that department. Other teachers are heavily loaded in their respective lines and cannot render the needed assistance. My request for an additional teacher for this work, made at the last Annual Meeting of the Board, is one which I feel compelled to urge persistently till the want is met.

IS A SURPLUS OF NORMAL GRADUATES POSSIBLE?

The growing popularity and increased number of the Normal Schools has naturally resulted in a largely increased annual product of graduates. Many individuals, including some who have the public ear, are proclaiming that there is already an over-production of Normal School graduates; "an alarming over-production," it has even been called by one. What disturbed this man's mind was the competition between graduates for positions, and the consequent cheapening of their salaries. There is no doubt that this competition exists, and that the average salaries of Normal graduates have been somewhat lowered in the last two years. From the standpoint of the graduate, this is doubtless an evil; but it is nevertheless a *public* good. The Normal schools are supported not in the interest of the graduates only, but for the benefit of the school children of the state. It is the proper aim of the Normal Schools to so multiply trained teachers that they may become cheap enough to be within the reach of as many schools as possible, in country as well as town. It is *impossible* to have too many Normal School graduates if the greater number is not secured by lowering the quality, either in scholarship or professional efficiency. But there was never greater need than now for guarding with critical rigor the quality of our product; and no Normal School in Wisconsin needs any longer to push for a larger enrollment.

THE ELEMENTARY COURSE.

In the statistical part of this report, attention was called to the fact that the High School graduate element in the membership of the school is steadily increasing. The same thing is doubtless true, in even greater degree, of most of the other schools.

Whitewater Normal School.

Probably one-half of the new students entered last year in all the Normal Schools collectively were High School graduates. This is an encouraging fact, and yet it is one which gives occasion for some concern. It is gradually modifying the character of the product of the Normal Schools; whether for the better, one must hesitate to say. I can never agree with that large body of theorizers who think that the Normal Schools should draw their membership wholly from the high schools, and that the country student desiring the privileges of the Normal School should come by way of the high school.

I am profoundly convinced that the Elementary Course is and will always continue to be an absolute necessity to the Normal Schools of Wisconsin. Its abolition would be an act of great injustice to the country youth and of great injury to the country schools. And it would no less work great injury to the Normal Schools themselves. We can by no means spare the country element from the Normal Schools. The plain fact is that professional ideals and the true pedagogical spirit require time for their development; and we cannot do in two years with high school graduates what we can do with pupils who remain with us four years or longer. I am compelled to believe that the work of the Normal Schools would suffer in tone and spirit by the exclusion or diminution of the rural element, for whom the Elementary Course is a permanent necessity.

NORMAL SCHOOLS AND RURAL SCHOOLS.

Half the school children of Wisconsin are enrolled in the rural schools. Most of these attend school only a part of each year and irregularly. These children need the best of teachers but, as a rule, they get the poorest. It is sometimes charged against the Normal Schools that they do little or nothing for the country schools. This is an ill-considered charge. Those who make it overlook the large body of undergraduates from the Normal Schools who are serving in the country schools. And the time has already come when Normal graduates do not think the larger country schools unworthy of their attention. During the past school year, eleven graduates from the Advanced Course in this

Whitewater Normal School.

school, and about twice as many from the Elementary Course, have been teaching in the rural schools of this State. A still larger number will doubtless be found in country schools during the coming year.

But there are other ways in which the Normal Schools, through their faculties can and should assist in the solution of the rural school problem. I do not refer now to the great service rendered by Normal School teachers as instructors in the Teachers' Institutes of the State — that is already too well known to need mention — but to the service they might render by carefully studying and pondering the new conditions which now environ the country school. Can the country school curriculum be enriched and reformed, and better suited to the needs of rural youth? If so, how? and what changes will such reform necessitate in the training of teachers for these schools? Such questions and other similar ones, demand immediate attention and effort at solution for the educators of the commonwealth. Why should not the Normal Schools lead the way in this agitation, since they exist no less for the service of the country than of the town?

SUMMER SESSIONS OF NORMAL SCHOOL.

The institution of summer sessions for regular work, first inaugurated by the University of Chicago, has begun to command serious attention from those charged with the administration of Normal Schools. This plan has already been adopted by our neighboring State, Minnesota. It seems reasonable to believe that this is one of the ways in which the Normal Schools may become more serviceable to the country schools and country teachers. It involves an increase of expense in the maintenance of the schools which we may not be justified in asking the State to incur at present. But there can be no question that it is our duty to be carefully studying the claims and practical operation of this plan.

Meanwhile, it seems wise to undertake, next summer, the operation of a five-weeks Summer school at Whitewater, similar to that which has already been instituted at Oshkosh, the con-

Whitewater Normal School.

sent of the Board having already been asked and granted. The execution of this plan will be undertaken by members of the faculty more through the motive of fealty to the school and its work than that of pecuniary recompense, which must, in the nature of the case be slight.

I desire to renew thanks to the Board and its officers for the just consideration shown to this school and all connected therewith.

Respectfully,

ALBERT SALISBURY.









BIENNIAL REPORT

OF THE

COMMISSIONERS

OF THE

PUBLIC LANDS

OF THE

STATE OF WISCONSIN,

For the Fiscal Year ending September 30, 1897 and 1898.



MADISON, WIS.:
DEMOCRAT PRINTING COMPANY, STATE PRINTER,
1898.



BIENNIAL REPORT

OF THE

Commissioners of the Public Lands.

OF THE

STATE OF WISCONSIN,

For the Biennial Fiscal Term Ending September 30, 1898.

OFFICE OF THE COMMISSIONERS OF THE PUBLIC LANDS.
MADISON, WISCONSIN, October 10, 1898.

To His Excellency EDWARD SCOFIELD,
Governor of the State of Wisconsin:

As required by law we have the honor to submit the following report of the transactions of this office during the biennial fiscal term ending September 30, 1898. The reports of the secretary of state and state treasurer exhibit detailed statements of the receipts and disbursements on account of the several funds affected by our action and to them we respectfully refer.

The only funds those reports do not show are the Non-productive Trust Funds, which consist principally of unsold lands, and their estimated value will be found, viz.:

THE NON-PRODUCTIVE TRUST FUNDS.

The non-productive capital of the several funds consists of the lands which have been offered for sale and are unsold, and cash in the treasury. School lands are estimated at the average price

The Non-Productive Trust Funds.

of \$1.10 per acre; University lands, \$2.50; Agricultural College, \$1.25; Normal School, \$1.40; Drainage lands, \$1.30, and Indemnity, \$3.00.

The following table shows the Non-productive Trust Funds, September 30, 1898, compared with the figures for September 30, 1896:

Fund.	Estimated value of lands Sept. 30, 1896.	Estimated value of lands Sept. 30, 1898.	Cash in state treasury Sept. 30, 1896.	Cash in state treasury Sept. 30, 1898.	Aggregate 1896.	Aggregate 1898.
School	\$44,739 07	\$35,817 00	\$23,152 48	\$12,402 31	\$67,891 55	\$78,249 31
State Park		22,823 00				22,823 00
Normal School ...	227,228 58	194,238 32	92,446 17	32,990 26	319,674 75	227,228 58
Agricult. College..	397 05	250 00	64,984 03	479 91	65,381 08	729 91
University	1,786 83	1,517 17	30,151 47	269 66	31,988 30	1,786 83
Drainage	210,559 90	179,351 61	32,079 27	31,208 29	342,639 17	210,559 90
State Park				346 61		346 61
General Fund.....		235,330 00		97,689 79		333,019 79
Indemnity	94,363 47	87,879 75	14,004 51	6,483 72	108,367 98	94,363 47
	\$579,074 90	\$757,236 85	\$256,817 93	\$211,870 55	\$935,892 83	\$969,107 40

Chapter 367 of the laws of 1897 directs the commissioners of the Public Lands, by and with the advice and approval of the Governor, to cause an estimate to be made of the pine and other timber as to quality, quantity and value, and the land as to quality of soil and value, of all the lands commonly known as State Park Lands.

Under this chapter the commissioners caused an estimate to be made of all of the lands in the so-called State Park, and upon this estimate fixed a minimum value for every government subdivision of these lands, and offered them for sale at public auction on the 15th day of December, 1897. The total number of acres in round numbers included in the State Park was 58,000, and the minimum value fixed by the commissioners in round

Sales of Public Lands.

numbers was \$346,000.00; at the public sale there were lands sold amounting in value to about \$93,000.00, all of which were sold for at least the minimum value fixed by the appraisers under the law, and the total amount received at the sale was about \$10,000.00 more than the minimum value fixed upon the lands which were purchased at the sale. The estimated value of the lands as fixed by the commissioners is included in the table immediately preceding and which accounts for the increase of the estimated value as heretofore given. The sales of these lands are given in a separate table found elsewhere in the report.

The lands remaining unsold after the public sale were placed upon sale at private sale, and those remaining unsold are now on sale under the same regulations as are applied to other lands, except that they are for sale at the minimum price fixed by the commissioners.

SALES OF PUBLIC LANDS.

SCHOOL LANDS.

The sales of school lands during the fiscal term ending September 30, 1898, amounted to 10,054.60 acres for the sum of \$45,938.93. From these sales the state received \$42,402.31, as principal, and other charges, \$727.62, leaving a balance due of \$2,809.00, upon which the state receives 7 per centum interest.

The following tables show the sales for the years 1897 and 1898, viz.:

Sales of Public Lands.

Sale of School Lands for the year ending September 30, 1897.

Counties.	No. of acres.	Amount sold for.	Principal paid.	Interest paid.	Other charges paid.	Balance due.
Adams	120.00	\$138 51	\$35 87	\$2 90	\$8 64	\$94 00
Ashland.....	40.00	50 00	13 00	36	.....	37 00
Buffalo.....	40.00	57 80	14 08	77	10 72	33 00
Burnett.....	320.00	332 20	165 35	6 05	7 85	159 00
Chippewa.....	240.00	291 91	165 22	26	39 69	87 00
Columbia.....	40.00	65 28	17 36	12	10 92	37 00
Door.....	.....	12 50	12 50	Material sold	.....	.....
Jackson.....	80.00	100 07	21 60	2 18	18 47	60 00
Juneau.....	332.50	378 31	160 19	4 13	38 12	180 00
Lincoln.....	91.10	146 54	127 54	.....	19 00	.....
Marinette.....	40.00	40 74	38 40	.....	2 34	.....
Monroe.....	800.00	1,010 32	311 36	17 59	103 96	595 00
Oconto.....	400.00	497 46	351 59	6 01	7 87	138 00
Ozaukee.....	.....	545 00	545 00	Escheat	.....	.....
Pepin.....	40.00	91 30	81 32	.....	9 98	.....
Portage.....	40.00	31 40	6 40	1 05	10 00	15 00
Price.....	80.00	123 26	79 18	.....	44 08	.....
St. Croix.....	360.00	444 60	120 19	84	53 41	271 00
Sauk.....	.....	27 50	27 50	.....	.....	.....
Shawano.....	8.72	26 16	7 16	1 06	.....	19 00
Washburn.....	160.00	178 42	178 42	.....	.....	.....
	3,232.32	\$4,589 28	\$2,479 23	\$43 32	\$385 05	\$1,725 00
Redemptions...	120.00	179 73	50 75	36	16 98	112 00
Total.....	3,112 32	\$4,409 55	\$2,428 48	\$42 96	\$368 07	\$1,613 00

Sales of Public Lands.

Sale of School Lands for the year ending September 30, 1898.

Counties.	No. of acres.	Amount sold for.	Principal paid.	Interest paid.	Other charges paid.	Balance due.
Adams	160.00	\$305 87	\$71 00	\$5 91	\$29 87	\$205 00
Bayfield.....	40.00	35 56	9 56	08		26 00
Burnett.....	1039.80	1,048 38	624 05	13 25	5 33	419 00
		125 70	125 70			
					Material sold.	
Columbia		90 80	79 18		11 62	
Douglas.....	40.00	35 72	33 06		2 66	
Grant.....	120.00	136 00	116 63		19 37	
Iron.....	328.00	2,592 00	2,592 00			
Iowa.....	40.00	88 43	22 40	4 23	2 03	64 00
Jackson.....	360.00	425 87	103 63	10 59	52 24	270 00
Juneau.....	80.00	86 56	21 73	1 84	8 83	56 00
Lincoln.....	55.88	65 50	16 57	2 66	10 93	38 00
Marathon.....	80.00	80 45	36 13	95	17 32	27 00
		69 79	69 79			
					Material sold.	
Marinette.....	80.00	83 31	74 40		8 91	
Monroe.....	120.00	176 90	104 01	2 47	9 89	63 00
Oconto.....	175.10	200 88	184 08		16 80	
Oneida.....	160.00	200 00	200 00			
Portage.....	40.00	274 03	239 89		34 14	
Taylor.....	280.00	276 35	209 72		66 63	
Vernon.....	200.00	106 56	88 81		17 75	
Vilas.....	3,390.05	35,847 00	35,843 69		3 31	
Washburn.....	240.00	268 93	202 40	1 80	38 53	28 00
Waushara.....	40.00	41 79	38 40		3 39	
	7,060.83	\$41,662 38	\$41,106 83	\$43 78	\$359 55	\$1,196 00
Refund.....	118.55	1,133 00	1,133 00			
Totals.....	6,942.28	\$41,529 38	\$39,973 83	\$43 78	\$359 55	\$1,196 00

Sales of Public Lands.

UNIVERSITY LANDS.

The sales of University Lands during the fiscal term ending September 30, 1898, amounted to 116.23 acres for the sum of \$334.71. From these sales the state received \$269.66 as principal and other charges \$11.05, leaving a balance of \$45.00 upon which the state receives 7 per centum interest. The following tables show the sales for the year 1897 and 1898, viz:

Sale of University Lands for the year ending September 30, 1897.

Counties.	No. of acres.	Amount sold for.	Principal paid.	Interest paid.	Other charges paid.	Balance due.
Marathon	40.00	\$88 27	\$87 20	.....	\$1 07	.....
Portage	36.23	73 80	19 80	\$3 63	.....	\$54 00
Total....	76.23	\$162 07	\$107 00	\$3 63	\$1 07	\$54 00

Sale of University Lands for the year ending September 30, 1898.

Counties.	No. of acres.	Amount sold for.	Principal paid.	Other charges paid.
Pepin .....	.....	\$91 30	\$81 32	\$9 98
Portage	40.00	81 34	81 34	.....
Total.....	40.00	\$172 64	\$162 66	\$9 98

Sales of Public Lands.

AGRICULTURAL COLLEGE LANDS.

The sales of Agricultural College Lands during the fiscal term ending September 30, 1898, amounted to 717.64 acres for the sum of \$867.20. From these sales the state received \$479.91 and other charges \$94.29, leaving a balance of \$293.00 upon which the state receives 7 per centum interest.

The following tables show the sales for the years 1897 and 1898, viz.:

Sale of Agricultural College Lands for the year ending September 30, 1897.

Counties.	No. of acres.	Amount sold for.	Principal paid.	Interest paid.	Other charges paid.	Balance due.
Polk	160.00	\$170 86	\$42 10	28	\$31 76	\$97 00
Shawano	280.00	349 29	90 76	59	62 53	196 00
Total	440.00	\$520 15	\$132 86	\$87	\$94 29	\$293 00

Sale of Agricultural College Lands for the year ending September 30, 1898.

Counties.	No. of acres.	Amount sold for.	Principal paid.
Langlade	40.00	\$50 00	\$50 00
Lincoln	237.64	297 05	297 05
Total	277.64	\$347 05	\$347 05

Sales of Public Lands.

MARATHON COUNTY LANDS.

The sales of Marathon county lands during the fiscal term ending September 30, 1898, amounted to 462.15 acres for the sum of \$346.61. The following tables show the sales for the years 1897 and 1898, viz.:

Sale of Marathon county lands for the year ending September. 30, 1897.

County.	No. of acres.	Amount sold for.	Principal paid.
Marathon.....	40.00	\$30 00	\$30 00

Sale of Marathon county lands for the year ending September. 30, 1898.

County.	No. of acres.	Amount sold for.	Principal paid.
Marathon.....	422.15	\$316 61	\$316 61

NORMAL SCHOOL LANDS.

The sales of Normal School lands during the fiscal term ending September 30, 1898, amounted to 20,265.30 acres for the sum of \$33,203.76.

From these sales the state received \$32,879.60 as principal, and other charges \$257.16, leaving a balance of \$67.00 upon which the state receives 7 per centum interest.

Sales of Public Lands.

The following tables show the sales for the years 1897 and 1898, viz.:

Sale of Normal School Lands for the year ending September 30, 1897.

Counties.	No. of acres.	Amount sold for.	Principal paid,	Other charges paid.
Adams	160.00	\$200 00	\$200 00	
Ashland .....	.....	404 22	404 22	Material sold.
Bayfield	120.00	220 00	220 00	
Burnett	528.41	791 27	791 27	
Chippewa	349.98	362 49	357 48	\$5 01
Clark	120.00	390 00	390 00	
Crawford	484.03	496 70	496 70	
Door	40.00	50 00	50 00	
Douglas	1,015.11	1,432 16	1,432 16	
Dunn	40.00	120 00	120 00	
Florence	160.00	200 00	200 00	
Forest	712.20	960 25	960 25	
Iron	120.00	777 03	{ 417 03	Material sold.
			{ 360 00	Sales.
Jackson	322.20	174 36	161 10	13 26
Jefferson	41.33	123 99	123 99	
Juneau	703.46	879 32	879 32	
Langlade	124.37	155 46	155 46	
Lincoln	960.00	1,981 50	1,981 50	
Marinette	244.32	409 67	403 24	6 43
Oconto	960.12	1,181 48	1,160 65	20 83
Oneida	1,975.13	2,936 10	{ 50 00	Material sold.
			{ 2,886 10	Sales.
Outagamie	271.81	573 64	556 91	16 73
Portage	319.93	427 18	419 95	7 23
Price	120.00	220 00	220 00	
Sawyer	80.00	170 00	170 00	
Shawano	120.00	126 32	110 00	16 32
Taylor	80.00	267 92	{ 97 92	Material sold.
			{ 170 00	Sales.
Vernon	40.00	30 00	30 00	
Vilas	193.75	415 88	{ 173 69	Material sold.
			{ 242 19	Sales.
Washburn	120.00	2,980 00	{ 2,760 00	Material sold.
			{ 220 00	Sales.
Wood	240.00	248 14	220 00	28 14
Refunds	10,766.15	\$19,705 08	\$19,591 13	\$113 95
	80.00	107 86	104 57	3 29
Total	10,686.15	\$19,597 22	\$19,486 56	\$110 66

Sales of Public Lands.

Sale of Normal School Lands for the year ending September 30, 1898.

Counties.	No. of acres.	Amount sold for.	Principal paid.	Interest paid.	Other charges paid.	Balance due.
Adams	223.97	\$279 96	\$279 96	.....	.....	.....
Ashland	200.00	390 00	390 00	.....	.....	.....
Barron	80.00	100 00	100 00	.....	.....	.....
Bayfield	80.37	179 15	179 15	.....	.....	.....
Burnett	560.00	750 00	750 00	.....	.....	.....
Burnett .....	.....	194 00	194 00	.....	.....	.....
Chippewa ...	80.00	100 00	100 00	.....	.....	.....
Door	35.80	40 75	31 03	.....	\$9 72	.....
Douglas	80.00	170 00	170 00	.....	.....	.....
Florence	136.26	170 33	170 33	.....	.....	.....
Forest	1,377.68	1,722 11	1,722 11	.....	.....	.....
Green Lake ..	40.00	58 86	48 15	.....	10 71	.....
Jackson	182.05	259 09	210 23	1 58	3 86	\$45 00
Juneau	1,938.41	2,423 03	2,323 03	.....	.....	.....
Langlade ...	160.00	270 00	270 00	.....	.....	.....
La Crosse ...	40.00	120 00	120 00	.....	.....	.....
Lincoln	320.00	400 00	400 00	.....	.....	.....
Marathon ...	709.60	624 40	606 65	.....	17 75	.....
Marinette ...	40.00	33 97	30 00	.....	3 97	.....
Monroe	120.00	153 89	114 30	26	17 59	22 00
Oconto	1,183 74	1,681 20	1,669 42	.....	21 78	.....
Oneida	529.81	965 73	965 73	.....	.....	.....
Portage	819.56	918 55	872 58	.....	45 97	.....
Price	40.00	50 00	50 00	.....	.....	.....
		50 00	50 00	.....	.....	.....
Shawano ...	161.30	341 63	341 63	.....	.....	.....
Taylor	80.00	170 00	170 00	.....	.....	.....
Vilas	120.00	150 00	150 00	.....	.....	.....
Washburn ..	33.60	42 00	42 00	.....	.....	.....
		85 70	85 70	.....	.....	.....
Waupaca ...	160.00	352 19	337 04	.....	15 15	.....
Waushara ...	.....	240 00	240 00	.....	.....	.....
Wood	40.00	120 00	120 00	.....	.....	.....
Totals ...	9,579.15	\$13,606 54	\$13,393 04	\$1 84	\$146 50	\$67 00

DRAINAGE LANDS.

The sales of Drainage Lands during the fiscal term ending September 30, 1898, amounted to 20,299.32 acres for the sum of \$31,466.91. From these sales the state received \$31,208.29 as principal and other charges of \$258.62.

Sales of Public Lands.

The following tables show the sales for the years 1897 and 1898, viz.:

Sale of Drainage Lands for the year ending September 30, 1897.

Counties.	No. of acres.	Amount sold for.	Principal paid.	Other charges paid.
Adams.....	80.00	\$100 00	\$100 00	.....
Ashland.....	40.00	50 00	50 00	.....
Bayfield.....	40.00	50 00	50 00	.....
Buffalo.....	.18	54	54	.....
Burnett.....	796.75	1,036 52	1,036 52	.....
Chippewa.....	40.00	50 00	50 00	.....
Clark.....	120.00	360 00	360 00	.....
Crawford.....	518.95	524 05	524 05	.....
Dodge.....	40.00	54 46	50 00	\$4 46
Douglas.....	1,083.62	1,424 53	1,424 53	.....
Eau Claire.....	43.81	54 76	54 76	.....
Florence.....	580.23	725 29	735 29	.....
Forest.....	807.58	1,079 48	1,079 48	.....
Green Lake.....	40.00	120 00	120 00	.....
Iron.....	40.00	1,158 46	1,108 46	Material sold.
			50 00	Sales.
Jackson.....	642.59	554 86	521 30	33 56
Juneau.....	518.47	648 09	648 09	.....
La Crosse.....	120.00	60 00	60 00	.....
Langlade.....	123 75	154 69	154 69	.....
Lincoln.....	1,040.00	2,070 00	2,070 00	.....
Marinette.....	411.75	471 59	438 81	32 78
Monroe.....	120.00	62 97	60 00	2 97
Oconto.....	120.00	150 00	150 00	.....
Oneida.....	1,673.20	2,301 51	2,301 51	.....
Outagamie.....	153.07	459 21	459 21	.....
Polk.....	27.10	20 33	20 33	.....
Portage.....	719.92	585 70	558 09	27 61
Price.....	134.60	168 25	168 25	.....
Sawyer.....	40.00	50 00	50 00	.....
Shawano.....	40.00	120 00	120 00	.....
Taylor.....	80.00	260 80	90 80	Material sold.
			170 00	Sales.
Vernon.....	39.14	29 34	29 34	.....
Vilas.....	180.10	350 64	55 51	Material sold.
			295 13	.....
Washburn.....	313.60	3,062 67	2,670 67	Material sold.
			392 00	Sales.
Waupaca.....	160.00	110 21	80 00	30 21
Waushara.....	80.00	177 69	170 00	7 69
Wood.....	151.15	84 04	75 58	8 46
Total.....	11,159.56	\$18,740 68	\$18,592 94	\$147 74

Sales of Public Lands.

Sales of Drainage lands for the year ending September 30, 1898.

Counties.	No. of acres.	Amount sold for.	Principal paid.	Other charges paid.
Adams.....	200 37	250 46	\$250 46	.....
Ashland.....	229.20	286 50	286 50	.....
Bayfield.....	119.17	287 51	287 51	.....
Buffalo.....	40.00	39 61	30 00	\$9 61
Burnett.....	1,174.07	1,407 59	1,407 59	} Trespass
		442 80	442 80	} damages.
Chippewa.....	80.00	80 00	80 00	.....
Crawford.....	40.43	30 43	30 43	.....
Douglas.....	85.87	257 61	257 61	.....
Door.....	172.68	91 13	86 34	4 79
Florence.....	80.00	100 00	100 00	.....
Forest.....	959.80	1,200 06	1,200 06	.....
Iron.....	40.00	120 00	120 00	.....
Jackson.....	40.00	22 87	20 00	2 87
Juneau.....	1,826.56	2,283 21	2,283 21	.....
Langlade.....	242.09	446 27	446 27	.....
Lincoln.....	280.95	422 85	422 85	.....
Manitowoc.....	40.00	57 80	48 15	9 65
Marathon.....	40.00	120 00	120 00	.....
Marinette.....	120.00	184 70	180 00	4 70
Monroe.....	246.97	151 75	123 49	28 26
Oconto.....	661.13	888 91	888 91	.....
Oneida.....	370.60	603 26	603 26	.....
Polk.....	40.00	30 00	30 00	.....
Portage.....	1,207.63	1,245 44	1,210 32	35 12
Price.....	160.00	200 00	200 00	.....
Richland.....	19 50	58 50	58 50	.....
Shawano.....	121.47	364 41	364 41	.....
Taylor.....	163.23	419 69	419 69	.....
Trempealeau.....	107.14	114 97	107 45	7 52
Vilas.....	116.90	210 70	210 70	.....
Washburn.....	.....	119 80	119 80	Tr's d'mg's.
Waupaca.....	114.00	187 40	179 04	8 36
Totals.....	9,139.76	\$12,726 23	\$12,615 35	\$110 88

Sales of Public Lands.

INDEMNITY LANDS.

The lands known as Indemnity Lands are the lands which the state received as indemnity and selected in lieu of swamp lands, located by United States land warrants. The sales of such lands during the fiscal term ending September 30, 1898, amounted to 2,077.24 acres, for the sum of \$5,851.11 as principal, and \$632.61 material sold.

The following tables show the sales for the years 1897 and 1898, viz.:

Sale of Indemnity Swamp Lands for the year ending September 30, 1897.

Counties.	No. of acres.	Amount sold for.	Principal paid.	
Forest	218.00	\$654 00	\$654 00	Material sold.
Lincoln	306.00	918 00	918 00	
Oneida	40.00	120 00	120 00	
Taylor	160.00	480 00	480 00	
Taylor .....	.....	632 61	632 61	
	724.00	\$2,804 61	\$2,804 61	
Disbursements .....	.....	100 76	100 76	
Total	724 00	\$2,703 85	\$2,703 85	

Sale of Indemnity Swamp Lands for the year ending September 30, 1898.

Counties.	No. of acres.	Amount sold for.	Principal paid.
Chippewa	316.27	\$948 81	\$948 81
Lincoln	440.00	1,320 00	1,320 00
Marquette	232.17	696 51	696 51
Oconto	200.00	320 00	320 00
Oneida	84.80	254 55	254 55
Sawyer	40.00	120 00	120 00
Taylor	40 00	120 00	120 00
Totals	1,353.24	\$3,779 87	\$3,779 87

Sales of Public Lands.

The following table shows the sales of "State Park Lands" under the provisions of chapter 367, laws of 1897, for the fiscal term ending September 30, 1898:

Sale of State Park Lands and Lands withdrawn from market by the Commissioners of the Public Lands for the year ending Sept. 30, 1898.

Counties.	No. of acres.	Amount sold for.	Principal paid.	
Iron	2,557.98	\$23,613 00	\$23,613 00	State Park.
Vilas	6,742.21	72,957 00	72,957 00	State Park.
Washburn .....	.....	1,119 79	1,119 79	Other Lands. Trespass collected.
	9,300.19	\$97,689 79	\$97,689 79	

SUMMARY.

The following table shows the aggregate sales of land during the fiscal term ending September 30, 1898:

Class of lands.	No. of acres sold.	Amount paid.
School	10,054.60	\$42,402 31
University	116.23	269 66
Agricultural College	717.64	479 91
Normal School	20,265.30	32,990 26
Drainage	20,299.32	31,208 29
Indemnity	2,077.24	6,483 72
Marathon County	462.15	346 61
State Park et al	9,300.19	97,689 79
	63,292.67	\$211,870 55

Sales of Public Lands.

PRICES AND TERMS OF SALES OF STATE LANDS.

Lands held by the state are subject to sale at private entry after having been offered at public auction, on the following terms: The School, University and Agricultural College lands are sold on ten years' time; twenty-five per cent. of the purchase money, interest on the seventy-five per cent. remaining unpaid, at the rate of seven per cent. per annum, from the date of purchase to the first of January following, and the certificate fee of fifty cents for each forty acres tract, being required in cash; interest thereafter at seven per cent. per annum, payable annually in advance. The Normal School and Drainage (Swamp) and Marathon County lands are sold for cash. The prices range as follows:

School lands from	\$1.00 to \$1.25 per acre.
University lands from	2.00 to 3 00 "
Agricultural College	1.25 "
Normal School land (swamp) from	.50 to 3.00 "
Drainage lands (swamp) from . .	.50 to 3.00 "
Marathon County lands . . . .	.75 "

Section 3, chapter 332, laws of 1883, provides that any lands the state owns may be entered by actual settlers at \$1.25 per acre, in quantities not exceeding two hundred acres, under such rules, requirements, restrictions, conditions and provisions as the commissioners of public lands may establish, to be approved by the governor.

FORFEITURE OF STATE LANDS.

The following tables show the number of acres held on certificates in the several counties and the amounts due that were forfeited for the non-payment of interest during the fiscal term ending September 30, 1898, viz.:

Forfeitures for the year ending September 30, 1896.

COUNTIES.	SCHOOL FUND.		UNIVERSITY FUND.		AGRICULTURAL COLLEGE FUND.		NORMAL FUND.	
	Acres.	Dues.	Acres.	Dues.	Acres.	Dues.	Acres.	Dues.
Adams	40.00	\$41 00						
Burnett	120.00	146 00						
Chippewa	120.00	118 00						
Douglas	80.00	59 00						
Dunn	40.00	27 00						
Eau Claire			40.14	54 00				
Forest	40.00	37 00						
Jackson	80.00	56 00						
Langade	160.00	148 00						
Marathon	120.00	86 00						
Monroe	200.00	166 00						
Oconto							80.00	\$67 00
Polk					160.00	\$130 00		
Portage	40.00	20 00						
Price	80.00	74 00						
St. Croix	278.90	264 30						
Shawano					369.57	342 00	40.00	60 00
Taylor	280.00	196 00						
Vernon	40.00	27 00						
Totals	1,718.90	\$1,465 30	40.14	\$54 00	527.57	\$472 00	120.00	\$127 00

Forfeitures.

Forfeitures for the year ending September 30, 1897.

COUNTIES.	SCHOOL FUND.		NORMAL FUND.		AGRICULTURAL COLLEGE FUND.	
	Acres.	Dues.	Acres.	Dues.	Acres.	Dues.
Adams	40.00	\$18 00	.....	.....	.....	.....
Ashland.....	160.00	148 00	.....	.....	.....	.....
Burnett.....	200.00	141 00	.....	.....	.....	.....
Columbia	80.00	74 00	.....	.....	.....	.....
Douglas.....	600.00	422 00	.....	.....	.....	.....
Eau Claire.....	160.00	172 00	.....	.....	.....	.....
Fond du Lac.....	.....	350 00	.....	.....	.....	.....
Grant.....	120.00	109 00	.....	.....	.....	.....
Lincoln.....	55.88	51 00	.....	.....	.....	.....
Monroe.....	40.00	27 00	.....	.....	.....	.....
Oconto.....	.....	.....	120.00	\$144 00	.....	.....
Oneida.....	39.20	36 00	.....	.....	.....	.....
Outagamie.....	24.47	16 00	.....	.....	.....	.....
Polk.....	40.00	27 00	.....	.....	.....	.....
Portage.....	.....	127 00	.....	.....	.....	.....
Shawano.....	40.00	28 00	.....	.....	.....	.....
Taylor.....	.....	.....	.....	.....	40.00	\$37 00
Vernon.....	160.00	56 00	.....	.....	.....	.....
Washburn.....	40.00	28 00	.....	.....	.....	.....
Waushara.....	40.00	29 00	.....	.....	.....	.....
Totals	1,839.55	\$1,859 00	120.00	\$144 00	40.00	\$37 00

Forfeitures.

Dues.

DUES.

The following tables show the amounts due the several funds upon lands held on certificates in the different counties outstanding October 1st, 1896, to which is added the balances of dues remaining unpaid on sales and redemptions on forfeitures before expiration of time for redemption of lands during the fiscal term ending September 30, 1898, and from such total the amount of dues paid and forfeitures are deducted, giving the amount outstanding September 30, 1898.

Dues.

"School Fund."

Counties.	Amount due on certificates outstanding Oct. 1, 1896.	Balance of dues on sales.	Amount of dues paid to Sept. 30, 1897.	Forfeitures and redemptions.	Outstanding dues September 30, 1897.
Adams	\$3,261 00	\$94 00	\$121 00	\$41 00	\$3,193 00
Ashland	554 00	37 00			591 00
Barron	325 00	33 00	102 00		256 00
Bayfield	2,569 00		752 00		1,817 00
Brown	511 08		51 00		460 08
Buffalo	974 00		71 00		903 00
Burnett	1,389 00	159 00	100 00	146 00	1,302 00
Calumet	72 00		12 00		60 00
Chippewa	2,692 00	87 00	2,282 00	118 00	379 00
Clark	632 00		180 00		452 00
Columbia	1,954 40	37 00	163 00	37 00	1,791 40
Crawford	2,304 94		127 00		2,177 94
Dane	239 17		72 00		167 17
Dodge	342 00				342 00
Door	315 00		53 00		262 00
Douglas	2,377 00		200 00	59 00	2,118 00
Dunn	1,056 00			27 00	1,029 00
Eau Claire	980 20		280 20		700 00
Florence	1,810 00				1,810 00
Fond du Lac	350 00				350 00
Forest	3,360 15		631 15	37 00	2,692 00
Grant	902 40		255 40		647 00
Green Lake	141 00		28 00		113 00
Iowa	567 42				567 42
Iron	2,822 52		432 00		2,390 52
Jackson	3,400 86	60 00	224 06	56 00	3,180 80
Jefferson	138 00				138 00
Juneau	2,554 00	180 00	216 00		2,518 00
Kenosha	181 00				181 00
La Crosse	472 00				472 00
La Fayette	133 00				133 00
Langlade	2,188 00		111 00	148 00	1,929 00
Lincoln	2,736 28		1,660 28		1,076 00
Manitowoc	855 00				855 00
Marathon	2,282 00		364 00		1,918 00
Marquette	2,792 00		37 00	86 00	2,669 00
Marquette	1,489 00		296 00		1,193 00
Monroe	1,824 80	595 00	202 00	166 00	2,051 80
Oconto	2,413 00	138 00	125 00		2,426 00
Oneida	1,060 00		434 00		626 00
Outagamie	1,597 60		535 00		1,062 60
Pepin	130 00				130 00
Pierce	904 62		100 00		804 62
Polk	3,712 00		74 00		3,638 00
Portage	1,835 00	15 00	21 00	20 00	1,809 00
Price	588 00				588 00

*Dues.**"School Fund"* — continued.

Counties.	Amount due on certificates outstanding Oct. 1, 1896.	Balance of dues on sales.	Amount of dues paid to Sept. 30, 1897.	Forfeitures and redemptions.	Outstanding dues September 30, 1897.
Racine.....	\$611 00			\$74 00	\$537 00
Richland	2,775 94		\$164 83		2,611 11
Rock	621 00		57 00		564 00
St. Croix.....	5,609 66	\$271 00	704 10	339 30	4,837 26
Sauk	1,312 85		335 95		976 90
Sawyer	677 00				677 00
Shawano	4,486 86	19 00	597 30	447 66	3,460 90
Sheboygan ..	200 00				200 00
Taylor	961 00		215 00	196 00	550 00
Trempealeau.	927 30		105 72		821 58
Vernon	4,204 60		711 50	27 00	3,466 10
Vilas	179 00				179 00
Washburn ...	1,756 50		37 50		1,719 00
Waukesha ...	90 00				90 00
Waupaca	1,511 00		167 00		1,344 00
Waushara ...	1,317 00		14 00		1,303 00
Winnebago ..	113 00				113 00
Wood.....	1,824 00		276 00		1,548 00
Total	\$94,965 15	\$1,725 00	\$13,697 99	\$2,024 96	\$80,967 20

Dues.

University Fund.

Counties.	Dues on certificates outstanding Oct. 1, 1896.	Balance of dues on sales.	Amount of dues paid to Sept. 30, 1897.	Forfeitures and redemptions.	Outstand'g dues September 30, 1897.
Calumet.....	\$184 00		\$184 00		
Chippewa....	325 00		97 00		\$228 00
Columbia....	85 00				85 00
Crawford....	105 00				105 00
Eau Claire...	2,025 00			\$116 00	1,909 00
Green.....	432 00				432 00
Iowa.....	41 00				41 00
Marathon....	191 00		130 00		61 00
Pepin.....	1,188 00		105 00		1,083 00
Pierce.....	3,794 00		469 00		3,325 00
Portage.....	54 00	\$54 00			54 00
Richland....	344 00		99 00		245 00
Rock.....	323 00				323 00
St. Croix....	102 00				102 00
Total....	\$9,193 00	\$54 00	\$1,084 00	\$116 00	\$7,993 00

Agricultural College Fund.

Counties.	Dues on certificates outstanding Oct. 1, 1896.	Balance of dues on sales.	Amount of dues paid to Sept. 30, 1897.	Forfeitures and redemptions.	Outstanding dues September 30, 1897.
Chippewa ...	\$888 00		\$37 00		\$851 00
Clark.....	267 00				267 00
Dunn.....	215 00		37 00		178 00
Langlade...	535 00		27 00		508 00
Lincoln.....	13,083 00		10,584 00		2,499 00
Oconto.....	213 00		37 00		176 00
Polk.....	30,656 00	\$97 00	384 00	\$499 00	29,870 00
Shawano....	2,685 00	196 00	37 00	342 00	2,502 00
Taylor.....	2,397 00		819 00		1,578 00
Totals ...	\$50,939 00	\$293 00	\$11,962 00	\$841 00	\$38,429 00

*Dues.**Normal School Fund.*

Counties.	Dues on certificates outstanding Oct. 1, '96.	Balance of dues on sales.	Amount of dues paid to Sept. 30, 1897.	Forfeitures and redemptions.	Outstanding dues Sept. 30, 1897.
Adams	\$455 00				\$455 00
Brown	135 00				135 00
Calumet	20 00				20 00
Columbia	149 00				149 00
Dane	259 00				259 00
Dodge	169 00				169 00
Dunn	304 00		\$95 00		209 00
Jackson	540 00				540 00
Juneau	180 00				180 00
Manitowoc	112 00				112 00
Marquette	194 00				194 00
Monroe	92 00				92 00
Oconto	2,832 00		105 00		2,727 00
Outagamie	515 00				515 00
Portage	301 00				301 00
Shawano	2,735 50	\$6 50	266 00		2,476 00
Waushara	467 00		230 00		237 00
Totals	\$9,459 50	\$6 50	\$696 00		\$8,770 00

Drainage Fund.

Counties.	Dues on certificates outstanding Oct. 1, 1896.	Balance of dues on sales.	Amount of dues paid to Sept. 30, 1897.	Forfeitures.	Outstanding dues Sept. 30, 1897.
Buffalo	\$49 00				\$49 00
Dane	579 00				579 00
Eau Claire	45 00				45 00
Green Lake	63 00				63 00
Manitowoc	36 00				36 00
Marquette	456 00	\$17 00	\$51 00		422 00
Waupaca	45 00				45 00
Waushara	45 00				45 00
Winebago	330 00				330 00
Total	\$1,648 00	\$17 00	\$51 00		\$1,614 00

Dues.

The following table shows the total acreage in the several counties held on contract and the balance of dues remaining unpaid and credited to the several funds for the fiscal term ending September 30, 1897.

COUNTIES.	SCHOOL FUND.		UNIVERSITY FUND.	
	Acres.	Balance of dues on certificates.	Acres.	Balance of dues on certificates.
Adams	3,520.00	\$3,193 00		
Ashland	800.00	591 00		
Barron	360.00	256 00		
Bayfield	2,657.20	1,817 00		
Brown	360.00	460 08		
Buffalo	800.00	903 00		
Burnett	1,806.50	1,302 00		
Calumet	40.00	60 00		
Chippewa	560.00	379 00	80.00	\$228 00
Clark	520.00	452 00		
Columbia	590.14	1,791 40	39.18	85 00
Crawford	2,230.56	2,177 94	75.80	105 00
Dane	40.00	167 17		
Dodge		342 00		
Door	400.00	262 00		
Douglas	2,956.70	2,118 00		
Dunn	1,320.00	1,029 00		
Eau Claire	840.00	700 00	1,024.65	1,909 00
Florence	1,940.44	1,810 00		
Fond du Lac		350 00		
Forest	3,042.22	2,692 00		
Grant	480.00	647 00		
Green			160.00	432 00
Green Lake	79.00	113 00		
Iowa	120.00	567 42	25.07	41 00
Iron	2,699.27	2,390 52		
Jackson	3,701.15	3,180 80		
Jefferson	120.00	138.00		
Juneau	3,218.57	2,518 00		
Kenosha	19.74	181 00		
La Crosse	328.14	472 00		
Lafayette	60.00	133 00		
Langlade	2,120.00	1,929 00		
Lincoln	1,495.88	1,076 00		
Manitowoc	161.74	855 00		
Marathon	2,440.00	1,918 00	40.00	61 00
Marinette	3,160 00	2,669 00		
Marquette	1,720.00	1,193 00		
Monroe	2,191.08	2,051 80		
Oconto	3,134.62	2,426 00		
Oneida	679.20	626 00		
Outagamie	1,117.74	1,062 60		
Pepin	120.00	130 00	451.17	1,083 00
Pierce	808.65	804 62	1,306.24	3,325 00

Dues.

The following table shows the total acreage in the several counties held on contract and the balance of dues remaining unpaid and credited to the several funds for the fiscal term ending September 30, 1897.—Continued.

COUNTIES.	SCHOOL FUND.		UNIVERSITY FUND.	
	Acres.	Balance of dues on certificates.	Acres.	Balance of dues on certificates.
Polk	3,950 88	\$3,638 00		
Portage	2,234.25	1,809 00	36.23	\$54 00
Price	720.00	588 00		
Racine.....	78.85	537 00		
Richland	1,630.78	2,611 11	80.00	245 00
Rock.....	40.00	564 00	80.00	323 00
St. Croix.....	3,699.37	4,837 26	40.00	102 00
Sauk.....	700.26	976 90		
Sawyer.....	1,040.00	677 00		
Shawano.....	4,302.42	3,460 90		
Sheboygan.....		200 00		
Taylor	515.80	550 00		
Trempealeau.....	1,040.00	821 58		
Vernon.....	3,278.37	3,466 10		
Vilas.....	200.00	179 00		
Washburn	2,561.20	1,719 00		
Waukesha	80.00	90 00		
Waupaca.....	720.00	1,344 00		
Waushara.....	1,280.00	1,303 00		
Winnebago.....	78.11	113 00		
Wood	1,760.00	1,548 00		
Total	84,668.83	\$80,967 20	3,438.34	\$7,993 00

Dues.

The following table shows the total acreage in the several counties held on contract and the balance of dues remaining unpaid and credited to the several funds for the fiscal term ending September 30, 1897.

COUNTIES.	AGRICULTURAL COLLEGE FUND.		NORMAL SCHOOL FUND.		DRAINAGE FUND.	
	Acres.	Balance of dues on certificates.	Acres.	Balance of dues on certificates.	Acres.	Balance of dues on certificates.
Adams			400.00	\$455 00		
Brown.....			120.00	135 00		
Buffalo.....					54.21	\$49 00
Calumet.....			40.00	20 00		
Chippewa ..	920.00	\$851 00				
Clark	327.00	267 00				
Columbia.....				\$149 00		
Dane.....			80.00	259 00	200.36	579 00
Dodge.....				169 00		
Dunn	200.00	178 00	120.00	135 00		
Eau Claire ..			120.00	209 00	40.00	45 00
Green Lake ..					40.00	63 00
Jackson.....			205.40	540 00		
Juneau.....			160.00	180 00		
Langlade....	560.00	508 00				
Lincoln	2,698.00	2,499 00				
Manitowoc ..				112 00	40.00	36 00
Marquette ..			80.00	194 00	366.43	422 00
Monroe			80.00	92 00		
Oconto.....	160.00	176 00	2,671.98	2,727 00		
Outagamie ..			26.77	515 00		
Polk.....	32,421.77	29,870 00				
Portage.....			120.00	301 00		
Shawano....	2,789.97	2,502 00	2,021.96	2,476 00		
Taylor	1,738 26	1,578 00				
Waupaca					40.00	45 00
Washara				237 00	40.00	45 00
Winnebago ..					156.50	330 00
Total	41,815.00	\$38,429 00	6,126.11	\$8,770 00	977 50	\$1,614 00

Dues.

DUES.

The following table shows the amounts due the several funds upon lands held on certificates for the fiscal term ending September 30, 1898, viz.:

School.....	\$61,674 62
University.....	6,238 00
Agricultural College	35,484 00
Normal School.....	6,519 00
Drainage.....	1,376 00
General Fund.....	97,689 79
Sale of State Park and other lands. ....	.....
Total	\$208,981 41

This statement, compared with same in former reports, shows a large and continuous decrease of principal and income from this source, which is accounted for by the increase of full payments on outstanding certificates and fewer purchases of lands on contract.

Dues.

School Fund.

Counties.	Amount due on certificates outstanding October 1, 1897.	Balance of dues on sales.	Amount of dues paid to Sept. 30, 1898.	Forfeitures.	Out-standing dues September 30, 1898.	Nc. of acres on contract October 1, 1897.	Decrease of acreage, by payments made.	Total on contract September 30, 1898.
Adams...	\$3,193 00	\$205 00	\$356 00	\$18 00	\$3,024 00	3,520 00		\$3,200 00
Ashland..	591 00			148 00	{ 443 00 *148 00	860.00	320.00	800 00
Barron...	256 00				276 00	390.00		360 00
Bayfield..	1,817 00	26 00	203 00		1,640 00	2,697 20	280.00	2,377 20
Brown...	460 08		90 68		369 40	360.00	80.00	280 00
Buffalo...	903 00		208 00		695 00	800.00	120.00	680 00
Burnett...	1,302 00	419 00	115 00	141 00	1,465 00	1,805 50	160.00	1,646 50
Calumet..	60 00				60 00	40.00		40 00
Chippewa..	379 00				379 00	560.00		560 00
Clark.....	452 00				452 00	520.00		5 20
Columbia..	1,791 40		163 80	74 00	1,553 60	590.14	120 00	470 14
Crawford..	2,177 94		187 00		1,990 94	2,230.56	240.00	1,990 56
Dane.....	167 17		100 00		67 17	40.00		40 00
Dodge.....	342 00				342 00			
Door.....	262 00		240 00		22 00	400.00	360.00	40 00
Douglas...	2,118 00		158 00	422 00	1,538 00	2,956.70	240.00	2,716 70
Dunn.....	1,029 00		285 00		744 00	1,320.00	320.00	1,000 00
Eau Claire	700 00			172 00	528 00	840.00		840 00
Florence...	1,810 00		687 00		1,123 00	1,940.44	584.90	1,355 54
F'd d' L'c	350 00			350 00				
Forest....	2,692 00		222 00		2,470 00	3,042.22	240.00	2,802 22
Grant.....	647 04			109 00	438 00	480.00		480 00
Gr'n L'ke.	113 00				113 00	79.00		79 00
Iowa.....	567 42	64 00			631 42	120.00		120 00
Iron.....	2,390 52		2,279 52		111 00	2,699.27	2,619.22	80 05
Jackson...	3,180 80	270 00	242 00		3,208 80	3,701.15	280.00	3,421 15
Jefferson..	138 00		86 00		52 00	120.00	80.00	40 00
Juneau...	2,518 00	56 00	492 00		2,082 00	3,218.57	680.00	2,538 57
Kenosha...	181 00				181 00	19.74		19 74
La Crosse..	472 00				472 00	323.14		328 14
Lafayette..	133 00				133 00	60.00		60 00
Langlade..	1,929 00		481 00		1,448 00	2,120.00	360.00	1,760 00
Lincoln...	1,076 00	38 00	162 00	51 00	901 00	1,495.88	240.00	1,255 88
M'nit'w'c.	855 00				855 00	161.74		161 74
Marathon...	1,918 00	27 00	1,666 00		279 00	2,440.00	1,760.00	680 00
Marinette..	2,669 00		2,308 00		361 00	3,160.00	2,440.00	720 00
Marquette	1,193 00				1,193 00	1,720.00		1,720 00
Monroe...	2,051 80	63 00	398 80	27 00	1,659 00	2,191.08	480 00	1,711 08
Oconto...	2,426 00		873 00		1,553 00	3,134.62	1,985.38	1,149 24
Oneida...	628 00		37 00	36 00	553 00	679.20	40.00	639 20
Out'g'mie	1,062 60		223 60	16 00	1,117.74	1,117.74	231.50	886 24
Pepin.....	130 00				130 00	120.00		120 00
Pierce.....	804 62		187 60		617 02	808.65	200.00	608 65
Polk.....	3,638 00		424 00	27 00	3,187 00	3,950.88	440.00	3,510 88
Portage...	1,809 00			127 00	1,682 00	2,234.25		2,234 25
Price.....	588 00				588 00	720.00		720 00
Racine...	537 00				537 00	78.85		78 85
Richland..	2,611 11		549 98		2,061 13	1,630 78	280.00	1,350 78
Rock.....	564 00				564 00	40.00		40 00
St. Croix..	4,837 26		996 20		3,841 08	3,699.37	760.00	2,939 37
Sauk.....	976 90		204 60		772 30	700.26	100.00	600 26
Sawyer...	677 00				677 00	1,040.00		1,040 00
Shawano...	3,460 90		1,529 90	28 00	1,903 00	4,302.42	1,412.90	2,889 52
Sheboyg'n	200 00				200 00			
Taylor.....	550 00		107 00		443 00	515.80	275.80	240 00
Tr'mp'lau	821 58		54 00		467 58	1,040.00	80.00	960 00
Vernon...	3,466 10		510 90	56 00	2,899 20	3,278.37	660.60	2,617 77
Vilas.....	179 00				179 00	200.00		200 00
Washburn..	1,719 00	28 00	265 00	28 00	1,454 00	2,561.20	240.00	2,821 20
Wauk'sha	90 00				90 00	80.00		80 00
Waupaca...	1,344 00		313 00		1,031 00	720.00	200.00	520 00
Waush'ra	1,303 00		91 00	29 00	1,183 00	1,280.00	120.00	1,160 00
Winn'b'go	113 00				113 00	78.11		78 11
Wood.....	1,548 00		1,280 00		268 00	1,760.00	1,520 00	240 00
Total...	\$80,967 20	\$1,196 00	\$18,777 58	\$1,859 00	\$61,674 62	84,668 83	20,550 30	\$64,118 53

* Redeemed.

*Dues.**University Fund.*

Counties.	Dues on certificates outstanding Oct. 1, 1897.	Amount of dues paid to Sept. 30, 1898.	Outstanding dues Sept. 30, 1898.	No. of acres on contract Oct. 1, 1897.	Decrease of acres by payments made.	Total on contract Sept. 30, 1898.
Chippewa.....	\$228 00		\$228 00	80 00		\$80 00
Columbia.....	85 00		85 00	39 18		39 18
Crawford.....	105 00		105 00	75 80		75 80
Eau Claire.....	1,909 00	\$175 00	1,734 00	1,024 65	80 00	944 65
Green.....	432 00		432 00	160 00		160 00
Iowa.....	41 00		41 00	25 07		25 07
Marathon.....	\$1 00	61 00		40 00	40 00	
Pepin.....	1,083 00	100 00	983 00	451 17		451 17
Pierce.....	3,325 00	1,250 00	2,075 00	1,306 24	560 00	746 24
Portage.....	54 00		54 00	36 23		36 23
Richland.....	245 00	99 00	146 00	80 00	40 00	40 00
Rock.....	323 00	70 00	253 00	80 00		80 00
St. Croix.....	102 00		102 00	40 00		40 00
Total.....	\$7,993 00	\$1,755 00	\$6,238 00	3,438 34	720 00	\$2,718 34

Agricultural College Fund.

Counties.	Dues on certificates outstanding Oct. 1, 1897.	Amount of dues paid to Sept. 30, 1898.	Forfeitures.	Outstanding dues Sept. 30, 1898.	No. of acres on contract Oct. 1, 1897.	Decrease of acres by payments made.	Total on contract Sept. 30, 1898.
Chippewa.....	\$851 00			\$851 00	920 00		\$920 00
Clark.....	267 00			267 00	327 00		327 00
Dunn.....	178 00			178 00	200 00		200 00
Langlade.....	508 00	\$101 00		407 00	560 00	120 00	440 00
Oconto.....	2,499 00			2,499 00	2,698 00		2,698 00
Pocahontas.....	176 00	74 00		102 00	160 00	80 00	80 00
Polk.....	29,870 00	1,104 00		28,766 00	32,421 77	1,240 00	31,181 77
Shawano.....	2,502 00	1,088 00		1,414 00	2,789 97	1,200 00	1,589 97
Taylor.....	1,578 00	541 00	\$37 00	1,000 00	1,738 26	600 00	1,138 26
Total.....	\$38,429 00	\$2,908 00	\$37 00	\$35,464 00	41,815 00	3,240 00	\$38,575 00

Dues.

Normal School Fund.

Counties.	Dues on certificates outstanding Oct. 1, 1897.	Balance of dues on sales.	Amount paid to Sept. 30, 1898.	Forfeitures.	Out-standing dues Sept. 30, 1898.	No. of acres on contract Oct. 1, 1897.	Decrease of acres by payments made.	Total on contract Sept. 30, 1898.
Adams...	\$455 00		\$56 00		\$399 00	400.00	80.00	\$320 00
Brown...	135 00		135 00		120 00	120.00	120.00	
Calumet.	20 00				20 00	40.00		40 00
Columb'a	149 00				149 00			
Dane....	259 00				259 00	80.00		80 00
Dodge...	169 00				169 00			
Dunn...	209 00		45 00		164 00	120.00	40.00	80 00
Jackson.	540 00	\$15 00	343 00		242 00	205.40	205.40	
Juneau...	180 00				180 00	160.00		160 00
Manitw'c	112 00				112 00			
Marq'e'te	194 00		45 00		149 00	80.00	40.00	40 00
Monroe..	92 00	22 00	22 00		92 00	80.00	40.00	40 00
Oconto...	2,727 00		937 00	144 00	1,646 00	2,671.98	905.38	1,766 60
Out'g'me.	515 00				515 00	26.77		26 77
Portage..	301 00		195 00		106 00	120.00	40.00	80 00
Shawano	2,476 00		396 00		2,080 00	2,021.96	321.11	1,700 85
Wau'ha'a	237 00				237 00			
Total..	\$8,770 00	\$87 00	\$2,174 00	\$144 00	\$3,519 00	6,126.11	1,791.89	\$4,334 22

Drainage Fund.

Counties.	* Dues on certificates outstanding October 1, 1897.	Amount paid to Sept. 30, 1898.	Outstanding dues Sept. 30, 1898.	No. of acres on contract Oct. 1, 1897.	Decrease of acres by payments made.	Total on contract Sept. 30, 1898.
Buffalo	\$49 00		\$49 00	54.21		\$54 21
Dane	579 00		579 00	200.36		200 36
Eau Claire.....	45 00	\$45 00		40.00	40.00	
Green Lake	63 00	63 00		40.00	40.00	
Manitowoc	36 00		36 00	40.00		40 00
Marquette	422 00	90 00	332 00	366.43	80.00	286 43
Waupaca	45 00		45 00	40.00		40 00
Waushara	45 00		45 00	40.00		40 00
Winnebago	330 00	40 00	290 00	156.50	36.50	120 00
Total.....	\$1,614 00	\$238 00	\$1,376 00	977.50	196 50	781 00

Loans.

LOANS.

The following tables show the amount due the Trust Funds for the fiscal term ending September 30, 1898, on account of loans to individuals. No loans to individuals have been made since 1865, and the amount is gradually diminishing by payments and forfeitures as shown by the following tables for the years 1897 and 1898:

Individual Loans for the Year Ending September 30, 1897.

Counties.	School.	Normal.	University.
Adams.....	\$335 00	\$350 00	.....
Brown.....	.....	250 00	.....
Chippewa	300 00	.....	.....
Columbia.....	725 00	375 00	.....
Dane.....	750 00	200 00	.....
Dodge.....	740 00	.....	.....
Green Lake.....	500 00	.....	.....
Iowa.....	1,299 24	500 00	\$350 00
Jackson.....	.....	200 00	.....
Jefferson.....	400 00	.....	.....
Juneau.....	150 00	300 00	.....
Lafayette.....	250 00	.....	.....
Manitowoc.....	.....	450 00	.....
Marquette.....	461 50	200 00	.....
Monroe.....	120 00	500 00	.....
Pierce.....	.....	133 00	.....
Portage.....	200 00	.....	.....
Racine.....	.....	400 00	.....
Racine City.....	537 00	.....	.....
Richland.....	.....	125 00	.....
Sheboygan.....	150 00	.....	.....
Waushara.....	450 00	.....	.....
Totals	\$7,367 74	\$3,983 00	\$350 00

Loans.

Individual Loans for the year ending Sept. 30, 1898.

Counties.	School.	Normal.	University.
Adams	\$335 00	\$200 00	.....
Brown .....	.....	250 00	.....
Chippewa	300 00	.....	.....
Columbia	725 00	375 00	.....
Dane	750 00	200 00	.....
Dodge	740 00	.....	.....
Green Lake	500 00	.....	.....
Iowa	1,299 24	500 00	\$350 00
Jackson .....	.....	200 00	.....
Jefferson	400 00	.....	.....
Juneau	150 00	300 00	.....
Lafayette	250 00	.....	.....
Manitowoc .....	.....	450 00	.....
Marquette	461 50	200 00	.....
Monroe	120 00	500 00	.....
Pierce .....	.....	133 00	.....
Portage	200 00	.....	.....
Racine .....	.....	400 00	.....
Racine City	537 00	.....	.....
Richland .....	.....	125 00	.....
Waushara	450 00	.....	.....
Totals	\$7,217 74	\$3,833 00	\$350 00

Loans.

LOANS.

Statement of the Trust Funds on account of loans made to individuals in the several counties September 30, 1898, compared with the amounts due September 30, 1896.

Counties.	Outstanding Sept. 30, 1896.	Paid during two years.	Outstanding Sept. 30, 1898.
Adams.....	\$885 00	\$350 00	\$535 00
Brown.....	250 00		250 00
Chippewa.....	300 00		300 00
Columbia.....	1,100 00		1,100 00
Dane.....	1,150 00	200 00	950 00
Dodge.....	740 00		740 00
Fond du Lac.....	300 00	300 00	
Grant.....	395 00	395 00	
Green Lake.....	1,000 00	500 00	500 00
Iowa.....	2,149 24		2,149 24
Jackson.....	200 00		200 00
Jefferson.....	400 00		400 00
Juneau.....	450 00		450 00
Lafayette.....	250 00		250 00
Manitowoc.....	750 00	300 00	450 00
Marquette.....	661 50		661 50
Monroe.....	620 00		620 00
Pierce.....	133 00		133 00
Portage.....	200 00		200 00
Racine.....	600 00	200 00	400 00
Racine City.....	537 00		537 00
Richland.....	425 00	300 00	125 00
Sheboygan.....	150 00	150 00	
Waushara.....	450 00		450 00
Totals.....	\$14,095 74	\$2,695 00	\$11,400 74

Investment of Trust Funds.

NEW INVESTMENT OF TRUST FUNDS.

The following statement shows the investment of Trust Funds during the fiscal term ending September 30, 1898.

SCHOOL FUND.		
Loans to school districts.....	\$197,739 25	
Loans to Barron County	2,000 00	
State Historical Building Association.....	10,000 00	
		\$209,739 25
AGRICULTURAL COLLEGE FUND.		
Loan to City of Antigo.....	\$7,000 00	
Loan to Town of Crandon.....	2,000 00	
Loan to Town of Harrison.....	770 00	
Loan to Board of Education, Sturgeon Bay.....	2,500 00	
Loan to Iron County.....	10,200 00	
		\$22,470 00
NORMAL SCHOOL.		
Loan to school districts.....	\$8,000 00	
Clintonville City Bonds.....	4,000 00	
Menomonie City Bonds.....	5,000 00	
Manitowoc County Bonds.....	70,000 00	
Waushara County Bonds	1,000 00	
Loan to Dunn County	45,000 00	
Loan to City of Clintonville.....	3,600 00	
Loan to City of Menomonie.....	54,000 00	
Loan to Town of Remington.....	3,000 00	
Loan to Town of Pelican.....	4,200 00	
Loan to Town of Spooner	3,500 00	
Loan to Town of Wood.....	5,000 00	
Loan to Town of Withee.....	800 00	
Loan to State Historical Library Association...	80,000 00	
Loan to Board Normal Regents.....	55,000 00	
Plymouth, Woneewoc and Elroy, City District No. 6, Bonds.....	2,000 00	
		\$344,100 00
Totals.....		\$576,309 25

Productive School Fund.

PRODUCTIVE SCHOOL FUND.

The amounts of productive School fund on the 30th day of September, 1897 and 1898 were as follows:

SCHOOL FUND.

	1897.	1898.
Dues on Certificates of Sales.....	\$80,967 20	\$64,118 53
Due on School District and Individual Loans	451,813 15	459,686 96
Certificates of Indebtedness, State of Wisconsin	1,563,700 00	1,563,700 00
Ashland County bonds.....	20,000 00	20,000 00
Ashland City bonds.....	25,000 00	25,000 00
Chippewa Falls City bonds	20,000 00	25,000 00
Chilton Town bonds.....	17,400 00	17,400 00
Chilton City bonds	7,600 00	7,600 00
Columbus City bonds.....	25,000 00	25,000 00
Elkhorn School bonds	2,000 00	.....
Elroy City bonds	6,350 00	6,350 00
Eau Claire bonds.....	30,000 00	30,000 00
Highland Village bonds.....	2,800 00	2,800 00
Madison City bonds	60,000 00	60,000 00
Milwaukee City bonds.....	203,000 00	203,000 00
Mnereal Point bonds.....	1,000 00	1,000 00
Marathon County Premium.....	336 72	.....
Milwaukee County School bonds.....	60,000 00	60,000 00
Oshkosh City School bonds	50,000 00	50,000 00
Oshkosh City Sewer bonds.....	20,800 00	19,800 00
Ripon City bonds.....	1,500 00	.....
Stoughton City bonds	15,000 00	12,000 00
Superior City bonds	250,000 00	250,000 00
Superior City Premium bonds	34,315 15	.....
Wausau City bonds	30,000 00	30,000 00
Loan to Barron County	2,000 00	2,000 00
Bayfield County.....	8,333 34	.....
Brown County	60,900 00	56,550 00
Chippewa County	42,947 36	40,421 04
Oneida County	26,000 00	24,000 00
Price County.....	8,000 00	4,000 00
Winnebago County	4,000 00	.....
City of Chippewa Falls	12,000 00	11,000 00
Green Bay	35,000 00	35,000 00
Jefferson	16,000 00	14,000 00
Menasha	12,000 00	12,000 00
New London	8,500 00	6,000 00
Oconto	29,750 00	28,000 00
Phillips	5,333 32	4,800 00
Rice Lake.....	9,400 00	8,100 00

Productive School Fund.

SCHOOL FUND — Continued.

	1897.	1898.
Loan to Town of Arcadia	\$3,333 33	\$1,666 66
Arena	100 00	
Ashland	860 39	430 19
Crandon	600 00	400 00
Moscow	1,514 00	767 00
Maine	1,300 00	1,050 00
Richfield	275 00	
Russell	1,500 00	750 00
Waldwick	5,950 00	5,100 00
State Agricultural Society	90,666 00	90,666 00
Hist. Libry. B'l'dg Ass'n	40,000 00	40,000 00
Totals	\$3,404,844 96	\$3,312,146 38

GENERAL FUND.

	1897.	1898.
Loan to State Agricultural Society	\$30,000 00	\$30,000 00
Mortgage on State Fair Grounds	47,782 03	47,782 03
	\$77,782 03	\$77,782 03

UNIVERSITY FUND.

	1897.	1898.
Dues on Certificates of Sales	\$7,993 00	\$2,718 34
Due on loans (individual)	350 00	350 00
Certificates of indebtedness	111,000 00	111,000 00
Eau Claire County bonds	10,000 00	10,000 00
Greenwood City Bonds	2,000 00	2,000 00
Manitowoc County bonds	30,000 00	29,000 00
Vernon County bonds	4,000 00	
Platteville City bonds	5,000 00	4,000 00
Tomahawk City bonds	2,500 00	1,000 00
Loan to Board of Education, City of Ripon.	2,000 00	1,750 00
Loan to Shawano county	3,000 00	1,500 00
Loan to Winnebago county	8,000 00	8,000 00
Loan to Village of Thorpe	2,500 00	2,000 00
Total	\$188,343 00	\$173,318 34

Productive School Fund.

AGRICULTURAL COLLEGE FUND.

	1897.	1898.
Dues on Certificates of Sales.....	\$38,429 00	\$35,484 00
Certificates of Indebtedness.....	60,600 00	60,600 00
Eau Claire County bonds.....	10,000 00	10,000 00
Eau Claire Bridge bonds.....	15,000 00	15,000 00
Eau Claire Prem. bonds.....	693 06	.....
Manitowoc County bonds.....	11,000 00	.....
Grand Rapids Bridge bonds.....	2,000 00	1,000 00
Black River Falls City bonds.....	13,641 67	11,141 67
Milwaukee City bonds.....	20,000 00	20,000 00
Platteville City bonds.....	2,600 00	400 00
Tomahawk City bonds.....	5,500 00	5,500 00
Loan to City of Antigo.....	.....	7,000 00
Loan to City of Merrill.....	2,000 00	1,000 00
Loan to City of Waupaca.....	4,000 00	3,000 00
Loan to Town of Colbourn.....	500 00	.....
Loan to Town of Bovina.....	3,500 00	3,000 00
Loan to Town of Crandon.....	.....	2,000 00
Loan to Town of Day.....	933 34	700 01
Loan to Town of Harrison.....	.....	770 00
Loan to Town of Oconto Falls.....	3,800 00	3,600 00
Loan to Town of Wein.....	1,800 00	1,500 00
Loan to Board of Education, City and Town of Ripon.....	5,000 00	4,500 00
Loan to Board of Education, Sturgeon Bay.....	.....	2,500 00
Loan to Winnebago.....	4,000 00	4,000 00
Loan to Iron.....	.....	10,200 00
Totals.....	\$204,997 07	\$202,895 68

Productive School Fund.

NORMAL SCHOOL FUND.

	1897.	1898.
Due on Certificates of Sales.....	\$8,770 00	\$6,519 00
Due on Loans (Individual and School Dis- tricts).....	19,683 00	12,600 58
Certificates of Indebtedness.....	515,700 00	515,700 00
Ashland County bonds.....	45,000 00	45,000 00
Vernon County bonds.....	23,000 00	23,000 00
Ashland City bonds.....	22,000 00	22,000 00
Ashland City Prem. bonds.....	1,011 60	
Chippewa Falls City bonds.....	35,000 00	35,000 00
Columbus City Hall bonds.....	12,000 00	12,000 00
Columbus School bonds.....	2,000 00	1,000 00
Beaver Dam City bonds.....	12,000 00	12,000 00
Clintonville bonds.....	4,000 00	
Durand bonds.....	3,000 00	3,000 00
Elroy bonds.....	2,000 00	
Edgerton bonds.....	12,000 00	10,000 00
Eau Claire bonds.....	10,000 00	
Eau Claire Prem. bonds.....	458 64	
Eau Claire Lt. Guard Armory bonds.....	10,000 00	10,000 00
Glenwood Town bonds.....	9,000 00	9,000 00
Hudson City bonds.....	39,000 00	39,000 00
Kenosha bonds.....	100,000 00	100,000 00
La Crosse bonds.....	10,000 00	10,000 00
Madison bonds.....	100,000 00	85,000 00
Menomonie bonds.....	5,000 00	
Milwaukee bonds.....	194,000 00	184,000 00
Menasha City School bonds.....	5,250 00	3,250 00
Oshkosh School bonds.....	38,000 00	
Oshkosh Bridge bonds.....	7,000 00	43,000 00
Plymouth City School bonds.....	8,500 00	8,500 00
Portage City School bonds.....	24,000 00	24,000 00
Manitowoc County bonds.....	70,000 00	70,000 00
Waushara County bonds.....	1,000 00	
Richland Center Water bonds.....	4,000 00	3,000 00
Loan to Brown County.....	7,500 00	5,000 00
Loan to Dunn County.....	45,000 00	40,000 00
Loan to Jackson County.....	18,000 00	16,000 00
Loan to Lincoln County.....	6,000 00	4,000 00
Loan to Washburn County.....	14,250 00	12,000 00
Loan to Chippewa County.....	15,210 52	14,315 80
Loan to Winnebago County.....	44,000 00	44,000 00
Loan to Board of Education, Madison.....	35,000 00	45,000 00
Loan to Board of Education, Whitewater... Loan to Board of Education, Grand Rapids.	4,000 00 8,550 00	2,000 00 7,600 00
Loan to Village of Bloomer.....	4,500 00	4,000 00
Loan to Village of Boyd.....	1,500 00	500 00
Loan to Village of Hammond.....	1,494 00	1,328 00

Productive Trust Fund.

NORMAL SCHOOL FUND.—Continued.

	1897.	1898.
Loan to Village of Whitefish Bay.....	\$4,800 00	\$4,200 00
Loan to City of Cumberland	5,310 00	4,720 00
Loan to City of Clintonville		3,600 00
Loan to City of Fond du Lac.....	19,000 00	18,000 00
Loan to City of Madison	15,000 00	
Loan to City of Menomonie	20,000 00	54,000 00
Loan to City of Mineral Point.....	9,000 00	9,000 00
Loan to City of New London.....	12,000 00	12,000 00
Loan to City of Onalaska	2,000 00	1,000 00
Loan to City of Prairie du Chien.....	10,000 00	10,000 00
Loan to City of Rhinelander	3,000 00	3,000 00
Loan to City of Phillips	6,666 65	6,000 00
Loan to City of Shawano	2,880 00	2,560 00
Loan to City of Waupaca	8,500 00	7,500 00
Loan to Town of Bayfield	12,000 00	9,000 00
Loan to Town of Cleveland.....	1,400 00	1,275 00
Loan to Town of Mosinee	450 00	400 00
Loan to Town of Pine River.....	500 00	
Loan to Town of Remington		3,000 00
Loan to Town of Richmond	4,750 00	4,500 00
Loan to Town of Pelican		4,200 00
Loan to Town of Seneca	1,200 00	1,200 00
Loan to Town of Spooner	4,000 00	3,000 00
Loan to Town of Spooner		3,500 00
Loan to Town of Wood.....	5,000 00	4,000 00
Loan to Town of Withee		800 00
Loan to Lt. Horse Squadron.....	30,000 00	30,000 00
Loan to State Hist. Libr'y Bldg. Assn.....	20,000 00	80,000 00
Loan to Board of Normal School Regents...	25,000 00	55,000 00
Plymouth, Wonewoc and Elroy City Dist.		
No. 6 bonds		2,000 00
Loan to Eau Claire Lt. Guard Armory.....		10,000 00
Totals.....	\$1,773,834 41	\$1,829,768 38

LOANS.

The following tables show the outstanding Loans to School Districts September 30, 1896, new loans made and amount of principal paid for the fiscal term ending September 30, 1898.

Loans.

No.	Name of district.	County.	Out-standing Sept. 30, 1896.	Princi-pal paid in 1897.	New loans made in 1897.	Out-standing Sept. 30, 1897.	Fund.
Jt. 8	Preston, Adams and Richfield.....	Adams...	\$50 00	\$50 00			School
2	Monroe.....	Adams...	262 50	87 50		\$175 00	School
Jt. 1	Lincoln and New Chester.....	Adams...	300 00	100 00		200 00	School
Jt. 1	Strong's Prairie and Monroe.....	Adams...	200 00	50 00		150 00	School
3	Leola.....	Adams...	150 00	25 00		125 00	School
Jt.10	Jackson and New Haven.....	Adams...	500 00	100 00		400 00	School
2	Leola.....	Adams...			\$175 00	175 00	School
	Butternut.....	Ashland..	375 00	125 00		250 00	School
Jt. 1	Barron City and Town.	Barron...	500 00	250 00		250 00	School
2	Dallas.....	Barron...	110 00	55 00		55 00	School
Jt. 3	Oak Grove and Stanfold.....	Barron...	157 11	78 57		78 57	School
2	Maple Grove.....	Barron...	180 00	30 00		150 00	School
Jt. 1	Stanfold, Stanley and Barron.....	Barron...	440 00			440 00	School
3	Stanley.....	Barron...	406 25	81 25		325 00	School
4	Maple Grove.....	Barron...	100 00	50 00		50 00	School
1	Turtle Lake.....	Barron...	170 00	85 00		85 00	School
Jt. 1	Turtle Lake, Beaver and Johnson. (See Polk Co.).....	Barron...					
5	Prairie Farm.....	Barron...	600 00	100 00		500 00	School
10	Cumberland.....	Barron...	400 00	100 00		300 00	School
9	Turtle Lake.....	Barron...	210 00	42 00		168 00	School
3	Sumner.....	Barron...	150 00	30 00		120 00	School
8	Turtle Lake.....	Barron...		81 25	325 00	243 75	School
3	Turtle Lake.....	Barron...			350 00	350 00	School
1	Cumberland.....	Barron...			600 00	600 00	School
11	Cumberland.....	Barron...			240 00	240 00	School
	Iron School Directors Washburn School Directors.	Bayfield.	2,266 67	1,133 34		1,133 33	School
	Iron River School Directors.....	Bayfield.	17,500 00	2,500 00		15,000 00	School
	Washburn School Directors.....	Bayfield.	2,000 00	500 00		1,500 00	School
	Washburn School Directors.....	Bayfield.	8,000 00	1,000 00		7,000 00	School
1	Bayfield.....	Bayfield.	2,500 00	2,500 00			N'rm'l
1	Bayfield.....	Bayfield.	20,000 00			20,000 00	School
6	Lawrence.....	Brown...	166 68	83 34		83 34	School
2	Howard.....	Brown...	1,260 00	140 00		1,120 00	N'rm'l
Jt. 3	Pittsfield and Maple Grove. (See Shawano Co.).....	Brown...					
Jt. 6	Pittsfield and Maple Grove. (See Shawano Co.).....	Brown...					
4	Buffalo.....	Buffalo..	150 00	50 00		100 00	School
5	Nelson.....	Buffalo..	880 00	220 00		660 00	School
Jt. 8	Glencoe and Arcadia. (See Trempealeau Co.).....	Buffalo..					
10	Grantsburgh.....	Burnett..	23 33	11 67		11 66	School
5	Rusk.....	Burnett..	400 00	50 00		350 00	School
7	Chilton.....	Calumet.	500 00	100 00		400 00	School
7	Brillion.....	Calumet.	750 00			750 00	School
5	Anson.....	Chip'ewa	40 00	20 00		20 00	School
11	Lafayette.....	Chip'ewa	30 00	30 00			School
11	Edison.....	Chip'ewa	300 00	300 00			School
1	Lawrence.....	Chip'ewa	200 00	200 00			School
4	Lafayette.....	Chip'ewa	100 00	100 00			School
15	Big Bend.....	Chip'ewa	200 00	100 00		100 00	School
10	Edson.....	Chip'ewa	425 00	212 50		212 50	School
6	Arthur.....	Chip'ewa	300 00	100 00		200 00	School
7	Arthur.....	Chip'ewa	300 00	100 00		200 00	School

Loans.

No.	Name of district.	County.	Out-standing Sept. 30, 1896.	Princi- pal paid in 1897.	New loans made in 1897.	Out- standing Sept. 30, 1897.	Fund.
3	Edson	Chip'ewa	\$500 00	\$100 00		\$400 00	School
8	Big Bend	Chip'ewa	700 00	100 00		600 00	School
11	Edson	Chip'ewa	4,000 00	400 00		3,600 00	School
7	Wheaton	Chip'ewa	400 00	50 00		350 00	School
9	Edson	Chip'wa.	\$800 00			800 00	School
8	Edson	Chip'wa.	600 00			600 00	School
14	Big Bend	Chip'wa.			\$650 00	\$650 00	School
7	Edson	Chip'wa.			600 00	600 00	School
6	Lafayette	Chip'wa.			200 00	200 00	School
Jt. 5	Pine Valley and Weston	Clark	100 00	100 00			
2	Hoard	Clark	50 00	50 00			
Jt. 3	Mayville and Hoard...	Clark	80 00	40 00		40 00	School
Jt. 3	Green Grove and Colby	Clark	300 00	100 00		200 00	School
Jt. 4	Hoard and Mayville...	Clark	150 00	50 00		100 00	School
2	Pine Valley	Clark	350 00	50 00		300 00	School
2	Loyal	Clark	1,200 00	150 00		1,050 00	School
4	Unity	Clark	200 00	50 00		150 00	School
Jt. 1	Baton, Warner and Greenwood	Clark	1,000 00	500 00		500 00	School
2	Withee	Clark	400 00	100 00		300 00	School
3	Thorp	Clark	333 34	166 67		166 67	School
5	Levis	Clark	342 86	57 14		285 72	School
Jt. 5	Unity (Brighton, Mara- thon Co.)	Clark	124 00	41 67		83 33	School
2	Hewitt	Clark	500 00	100 00		400 00	School
Jt. 3	York and Grant	Clark	800 00	100 00		700 00	School
2	Hixon	Clark	1,000 00	333 33		666 67	School
2	Greene Grove	Clark	600 00	100 00		500 00	School
Jt. 1	Unity (Brighton, Mara- thon Co.)	Clark	20	20			School
1	Lynn	Clark			800 00	800 00	School
Jt. 1	Colby City and Town (Hull, Marathon Co.)	Clark			700 00	700 00	School
6	Levis	Clark			440 00	440 00	School
4	Hixon	Clark			712 25	712 45	School
1	Weston	Clark			500 00	500 00	School
Jt. 1	Thorp and Withee and Village of Thorp.	Clark			1,800 00	1,800 00	School
3	Hewitt	Clark			200 00	200 00	School
Jt. 5	Leeds (Vienna, Wind- sor. See Dane Co.) ..	Col'mbia					
1	Dekorra	Col'mbia	500 00	100 00		400 00	School
5	Haney	Crawf'rd	50 00	50 00			School
7	Scott	Crawf'rd	300 00	60 00		240 00	School
Jt. 1	Freeman and Sereca .	Crawf'rd	700 00	100 00		600 00	School
Jt. 11	Utica and Clayton ..	Crawf'rd	1,200 00	120 00		1,080 00	School
Jt. 2	Easton and Marietta..	Crawf'rd		50 00	350 00	300 00	School
11	Madison	Dane	1,150 00	383 34		766 66	School
12	Middleton	Dane	1,000 00	500 00		500 00	School
4	Springdale	Dane	400 00	200 00		200 00	School
Jt. 5	Windsor, Vienna (Leeds, Col'mbia Co)	Dane	999 00	500 00		499 00	Norm'l
Jt. 11	Perry et al. (See Iowa Co.)	Dane					
5	Albion	Dane	600 00	200 00		400 00	School
1	Oregon	Dane	9,000 00	900 00		8,100 00	School
1	Oregon	Dane			1,000 00	1,000 00	School
Jt. 6	Middleton and Madis'n	Dane		283 33	850 00	566 67	School
Jt. 1	Windsor and Burke ..	Dane			325 00	325 00	School
Jt. 5	Christiana (Oakland, Jefferson Co.)	Dane			1,300 00	1,300 00	School
1	Blue Mounds	Dane			2,400 00	2,400 00	School
7	Oak Grove	Dodge	1,500 00	500 00		1,000 00	School
Jt. 9	Beaver Dam and Lowell	Dodge			375 00	375 00	School
1	Sturgeon Bay	Door	40 00	40 00			School
3	Washington	Door	93 72	46 88		46 84	School

Loans.

No.	Name of district.	County.	Out-standing Sept. 30, 1896.	Princi-pal paid in 1897.	New loans made in 1897.	Out-standing Sept. 30, 1879.	Fund.
5	Nasewaupee	Door ...	\$168 7	\$56 25	.....	\$112 50	School
2	Egg Harbor	Door ...	500 00	.....	.....	500 00	School
3	Clay Banks	Door ...	300 00	50 00	.....	250 00	School
2	Jacksonport	Door ...	375 00	93 75	.....	281 25	School
Jt. 3	Nasewaupee and Sturgeon Bay	Door ...	850 00	94 45	.....	755 55	School
	Brule School Directors	Douglas.	100 00	100 00	.....	.....	School
	Brule School Directors	Douglas.	400 00	400 00	.....	.....	School
	Brule School Directors	Douglas.	400 00	400 00	.....	.....	School
	Brule School Directors	Douglas.	500 00	.....	.....	500 00	School
	Nebagamain School Directors	Douglas.	265 00	265 00	.....	.....	School
	Brule School Directors	Douglas.	500 00	.....	.....	500 00	School
	Superior School Directors	Douglas.	3,000 00	.....	.....	3,000 00	School
	Nebagamain School Directors	Douglas.	.....	.....	\$500 00	500 00	School
Jt. 1	Rock Creek (Brunswick Eau Claire Co.)	Dunn	25 00	25 00	.....	.....	School
3	Colfax	Dunn	300 00	100 00	.....	200 00	School
7	Spring Brook	Dunn	160 00	40 00	.....	120 00	School
Jt. 1	Hay River and Sherman	Dunn	62 50	62 50	.....	.....	School
Jt. 7	Tiffany et al. (See St. Croix Co.)	Dunn ....	.....	.....	.....	.....	.....
1	Tiffany	Dunn	400 00	100 00	.....	300 00	School
9	Menomonie	Dunn	205 00	50 00	.....	150 00	School
Jt. 8	Stanton and Tiffany	Dunn	180 00	90 00	.....	90 00	School
5	Sherman	Dunn	400 00	100 00	.....	300 00	School
4	Elk Mound	Dunn	250 00	125 00	.....	125 00	School
2	Colfax	Dunn	160 00	40 00	.....	120 00	School
Jt. 4	Otter Creek, Colfax, Grant and Taintor	Dunn	225 00	37 50	.....	187 50	School
4	Colfax	Dunn	200 00	50 00	.....	150 00	School
5	Stanton	Dunn	300 00	100 00	.....	200 00	School
4	Lucas	Dunn	300 00	100 00	.....	200 00	School
5	Hay River	Dunn	275 00	27 50	.....	247 50	School
Jt. 8	Stanton and Tiffany	Dunn ....	.....	.....	150 00	150 00	School
2	Grant	Dunn ....	.....	.....	100 00	100 00	School
Jt. 1	Lucas et al. (See St. Croix Co.)	Dunn ....	.....	.....	.....	.....	.....
Jt. 1	Brunswick et al. (See Dunn Co.)	Eau Cl're	.....	.....	.....	.....	.....
	Eau Claire City	Eau Cl're	32,000 00	2,000 00	.....	30,000 00	School
5	Pleasant Valley	Eau Cl're	100 00	100 00	.....	.....	.....
5	Brunswick	Eau Cl're	500 00	100 00	.....	400 00	School
1	Commonwealth	Florence	1,000 00	200 00	.....	800 00	School
12	Metomen	F. du L'c	.....	.....	6,000 00	6,000 00	School
	Gagen	Forest...	100 00	100 00	.....	.....	School
Jt. 9	Wyalusing and Bloomington	Grant ...	175 00	175 00	.....	.....	.....
3	Wingville High School	Grant ...	5,000 00	.....	.....	5,000 00	School
2	Fennimore	Grant ...	4,365 00	.....	.....	4,365 00	School
4	Platteville	Grant ...	.....	.....	2,000 00	2,000 00	School
Jt.17	Lancaster, Beetown and Little Grant	Grant ...	.....	.....	300 00	300 00	School
3	Mt. Pleasant	Green ...	1,200 00	400 00	.....	800 00	School
Jt.11	York et al. (See Iowa Co.)	Green ...	.....	.....	.....	.....	.....
1	New Glarus	Green ...	5,000 00	.....	.....	5,000 00	School
Jt.11	Moscow (Perry and York, Dane Co.)	Iowa ...	400 00	50 00	.....	350 00	School
Jt. 1	Moscow et al. (see La Fayette Co.)	Iowa ...	.....	.....	.....	.....	School
9	Moscow	Iowa ...	500 00	.....	.....	500 00	School
1	Moscow	Iowa ...	1,800 00	180 00	.....	1,620 00	School
	Saxon School Directors	Iron ...	2,500 00	.....	.....	2,500 00	School
4	Vaughn	Iron ...	.....	.....	600 00	600 00	School

Loans.

No.	Name of district.	County.	Out- standing Sept. 30, 1896.	Princi- pal paid in 1897.	New loans made in 1897.	Out- standing Sept. 30, 1897.	Fund.
Jt. 3	Garden Valley, North- field, Hixton and Curran	Jackson.	\$215 00	\$72 00	.....	\$143 00	School
13	Albion	Jackson.	5 00	5 00	.....	.....	School
Jt. 11	Albion, Oring, Spring- field and Franklin...	Jackson.	175 00	175 00	.....	.....	School
11	Albion	Jackson.	40 00	40 00	.....	.....	School
3	Albion	Jackson.	147 80	73 90	.....	73 90	School
1	Northfield	Jackson.	150 00	50 00	.....	100 00	School
4	Garfield	Jackson.	100 00	50 00	.....	50 00	School
4	Garden Valley	Jackson.	120 00	20 00	.....	100 00	School
7	Alma	Jackson.	433 34	108 34	.....	325 00	School
3	Northfield	Jackson.	250 00	50 00	.....	200 00	School
Jt. 5	Springfield and Curran	Jackson.	500 00	100 00	.....	400 00	School
Jt. 4	Hixton and Curran....	Jackson.	1,600 00	200 00	.....	1,400 00	School
Jt. 4	Springfield	Jackson.	500 00	100 00	.....	400 00	School
Jt. 4	Hixton and Curran....	Jackson.	.....	.....	\$720 00	720 00	School
Jt. 5	Franklin et al. (See Trempealeau Co.)	Jackson.	.....	.....	.....	.....	School
Jt. 1	Albion and Black River Falls	Jackson.	.....	.....	8,000 00	8,000 00	School
Jt. 1	Albion and Black River Falls	Jackson.	.....	.....	2,000 00	2,000 00	School
Jt. 4	Sullivan and Concord.	Jefferson	700 00	330 00	.....	400 00	School
1	Palmyra	Jefferson	8,800 00	.....	.....	8,800 00	School
Jt. 8	Aztalan and Farm'ton	Jefferson	.....	.....	3,500 00	3,500 00	School
1	Waterloo Village....	Jefferson	.....	.....	8,000 00	8,000 00	Norm'l
Jt. 5	Oakland et al. (See Dane Co.)	Jefferson	.....	.....	.....	.....	School
3	Armenia	Juneau..	70 00	70 00	.....	.....	School
4	Armenia	Juneau..	106 00	106 00	.....	.....	School
4	Armenia	Juneau..	150 00	.....	.....	150 00	School
3	Clearfield	Juneau..	100 00	20 00	.....	80 00	School
5	Armenia	Juneau..	175 00	35 00	.....	140 00	School
3	Kingston	Juneau..	300 00	60 30	.....	240 00	School
6	Armenia .....	.....	.....	.....	300 00	300 00	School
1	Carlton	Kewa'ne	700 00	233 33	.....	466 67	School
4	Carlton	Kewa'ne	.....	.....	500 00	500 00	School
Jt. 1	Ahnapee City and Town	Kewa'ne	.....	.....	2,000 00	2,000 00	School
6	Campbell	La Cr'sse	380 00	97 50	.....	292 50	School
6	Campbell	La Cr'sse	500 00	100 00	.....	400 00	School
Jt. 1	Blanchard (Moscow, Iowa Co.)	LaFa'tte	500 00	100 00	.....	400 00	School
2	New Diggings	LaFa'tte	600 00	150 00	.....	450 00	School
4	Summit	Langl'de	90 00	30 00	.....	60 00	School
2	Summit	Langl'de	66 00	22 00	.....	44 00	School
2	Rolling	Langl'de	240 00	30 00	.....	210 00	School
5	Norwood	Langl'de	300 00	100 00	.....	200 00	School
2	Langlade	Langl'de	500 00	.....	.....	500 00	School
1	Rolling	Langl'de	450 00	45 00	.....	405 00	School
3	Rock Falls	Lincoln.	1,999 50	666 50	.....	1,333 00	School
3	Harrison	Lincoln.	153 20	76 60	.....	76 60	School
5	Russell	Lincoln.	300 00	100 00	.....	200 00	School
3	Merrill School Dir'tors	Lincoln.	1,500 00	300 00	.....	1,200 00	School
3	Harrison	Lincoln.	.....	100 00	600 00	500 00	School
4	Eaton	Man'woc	500 00	125 00	.....	375 00	School
Jt. 2	Manitowoc City....	Man'woc	8,000 00	.....	.....	8,000 00	School
Jt. 4	Manitowoc Town and City	Man'woc	.....	.....	5,000 00	5,000 00	School
4	Hull	Mara'h'n	35 00	35 00	.....	.....	.....
3	Eau Plaine	Mara'h'n	50 00	50 00	.....	.....	.....
4	McMillan	Mara'h'n	200 00	50 00	.....	150 00	.....
1	Wein	Mara'h'n	250 00	50 00	.....	200 00	.....
Jt. 1	Brighton and Unity (See Clark Co.)	Mara'h'n	.....	.....	.....	.....	.....
Jt. 2	Frankfort and Hull...	Mara'h'n	250 00	50 00	.....	200 00	.....
2	Harrison	Mara'h'n	100 00	50 00	.....	50 00	.....

Loans.

No.	Name of district.	County.	Out-standing Sept. 30, 1896.	Princi-pal paid in 1897.	New loans made in 1897.	Out-standing Sept. 30, 1897.	Fund.
Jt. 2	Norrie, Easton and Plover	Mara'h'n	\$80 00	\$30 00			
4	Frankfort	Mara'h'n	244 44	48 89		\$195 55	
1	Plover	Mara'h'n	133 32	66 66		66 66	
4	Holston	Mara'h'u	80 00	40 00		40 00	
2	Easton	Mara'h'n	210 00	30 00		180 00	
Jt. 9	Wausau and Texas	Mara'h'n	330 00	55 00		275 00	
13	Mosinee	Mara'h'n	100 00	50 00		50 00	
5	Cleveland	Mara'h'n	288 00	98 00		192 00	
4	Eau Plaine	Mar't'on.	200 00	100 00		100 00	School
1	Kronenwetter	Mar't'on.	300 00	100 00		200 00	School
Jt. 6	Wein and Cassell	Mar't'on.	436 00	54 50		381 50	School
Jt. 3	Harrison and Plover	Mar't'on.	300 00	50 00		250 00	School
2	Eau Plaine	Mar't'on.	300 00	50 00		250 00	School
4	Wein	Mar't'on.	400 00	100 00		300 00	School
1	Hull	Mar't'on.	450 00	50 00		400 00	School
1	Bergen	Mar't'on.	240 00	60 00		180 00	School
1	Hull	Mar't'on.	247 50	27 50		220 00	School
5	Day	Mar't'on.	540 00	60 00		480 00	School
3	Marathon	Mar't'on.	400 00	100 00		300 00	School
Jt. 5	Brighton and Unity. (See Clark County)	Mar't'on.					School
2	Halsey	Mar't'on.	275 00	55 00		220 00	School
1	McMillan	Mar't'on.	40 00	120 00		360 00	School
1	Day	Mar't'on.	250 00			250 00	School
5	Eldron	Mar't'on.	300 00	30 00		270 00	School
3	Frankfort	Mar't'on.	600 00	60 00		540 00	School
5	Frankfort	Mar't'on.	400 00	40 00		360 00	School
Jt. 1	Hull et al. (See Clark County)	Mar't'on.					
Jt. 2	Day et al. (See Wood County)	Mar't'on.					
4	Easton	Mar't'on.			\$300 00	300 00	School
Jt. 1	Norrie	Mar't'on.			600 00	600 00	School
6	Wausau and Easton	Mar't'on.			300 00	300 00	School
2	Peshigo	M'r'in'te.	344 44	172 22		172 22	School
10	Coleman	M'r'in'te.	300 00	100 00		200 00	School
6	Amberg	M'r'in'te.	800 00	800 00			School
11	Coleman	M'r'in'te.	225 00			225 00	School
7	Peshigo	M'r'in'te.			250 00	250 00	School
4	Peshigo	M'r'in'te.			500 00	500 00	School
4	Peshigo	M'r'in'te.			750 00	750 00	School
4	Grover	M'r'in'te.			450 00	450 00	School
5	Coleman	M'r'in'te.			300 00	300 00	School
7	Amberg	M'r'in'te.			300 00	300 00	School
1	Montello	Marq'tte.	6,600 00	660 00		5,940 00	School
Jt. 4	Crystal Lake and Neshkoro	Marq'tte.			200 00	200 00	School
5	Wauwatosa	Milw'k'e.	8,000 00	1,000 00		7,000 00	School
Jt.17	Granville and Wauwatosa	Milw'k'e.	3,428 57	571 43		2,857 14	School
4	Milwaukee	Milw'k'e.	1,100 00	183 34		916 66	School
Jt 16	Wauwatosa and Greenfield	Milw'k'e.	8,000 00			8,000 00	School
7	Byron	Monroe	25 00	25 00			School
2	Byron	Monroe	100 00	25 00		75 00	School
Jt. 8	Byron and Lincoln	Monroe	60 00	15 00		45 00	School
8	Lincoln	Monroe	135 00	15 00		120 00	School
Jt. 2	La Grange, Lincoln and Byron	Monroe	150 00	30 00		120 00	School
5	Byron	Monroe	180 00	30 00		150 00	
3	Wilton	Monroe	350 00	116 67		233 33	
2	Gillett	Oconto	78 58	78 58			School
1	Stiles	Oconto	500 00	100 00		400 00	School
4	Oconto Falls	Oconto	200 00	200 00			School
6	Maple Valley	Oconto	400 00	200 00		200 00	School
7	Little River	Oconto	100 00	100 00			School
8	Oconto	Oconto	100 00	100 00			School

Loans.

No.	Name of district.	County.	Out-standing Sept. 30, 1896.	Princi- pal paid in 1897.	New loans made in 1897.	Out- standing Sept. 30, 1897.	Fund.
1	Spence	Oconto ..	\$200 00	\$100 00		\$100 00	School
2	Pensaukee	Oconto ..	720 00	240 00		480 00	School
5	Little River	Oconto ..	426 00	85 20		340 80	School
Jt. 6	Oconto Falls and Stiles	Oconto ..	325 00	65 00		260 00	School
3	Lena	Oconto ..			\$500 00	500 00	School
3	Gillett	Oconto ..			2,500 00	2,500 00	School
1	Howe	Oconto ..			250 00	250 00	School
3	Pensaukee	Oconto ..			350 00	350 00	School
Jt. 6	Chase, North and South et al. (See Shawano County.)	Oconto ..					School
	Pelican School Direc- tors	Oneida ..	1,350 00	450 00		900 00	School
	Pelican	Oneida ..	1,200 00	300 00		900 00	School
	Pelican School Direc- tors	Oneida ..	3,500 00	500 00		3,000 00	School
	Pelican School Direc- tors	Oneida ..	2,005 00	200 00		1,800 00	School
2	City of Appleton	Out'g'me	17,500 00	2,500 00		15,000 00	School
4	Deer Creek	Out'g'me	400 00	100 00		300 00	School
Jt. 3	Black Creek & Osborn	Out'g'me	250 00	62 50		187 50	School
1	Bovina	Out'g'me	400 00			400 00	School
6	Bovina	Out'g'me	350 00			350 00	School
4	Maine	Out'g'me		78 58	550 00	471 42	School
Jt. 2	Kaukauna Town, and City	Out'g'me			10,000 00	10,000 00	School
1	City of Appleton	Out'g'me			10,000 00	10,000 00	School
2	City of Appleton	Out'g'me			25,000 00	25,000 00	School
4	Bovina	Out'g'me			500 00	500 00	School
Jt. 4	Port Washington City and Town	Ozaukee.	2,800 00	466 67		2,333 33	School
4	Albany	Pepin ..	200 00	40 00		160 00	School
Jt. 3	Waubeck and Water- ville	Pepin ..	200 00	100 00		100 00	School
1	Spring Lake	Pierce ..	360 00	120 00		240 00	School
7	Trim Belle	Pierce ..	1,100 00	100 00		1,000 00	School
3	Union	Pierce ..	1,170 00	130 00		1,040 00	School
6	Trim Belle	Pierce ..	333 33	166 67		166 66	School
5	Hartland	Pierce ..	500 00	125 00		375 00	School
1	Union	Pierce ..		100 00	500 00	400 00	School
8	River Falls	Pierce ..			600 00	600 00	School
2	Clam Falls	Polk ..	20 00	20 00			School
Jt. 1	Johnstown, Beaver (Turtle Lake, Barron Co.)	Polk ..	66 66	66 65		01	School
Jt. 1	Clear Lake and Black Brook	Polk ..	850 00	170 00		680 00	School
1	Beaver	Polk ..	100 00	50 00		50 00	School
2	Balsam Lake	Polk ..	360 00	60 00		300 00	School
2	Apple River	Polk ..	210 00	70 00		140 00	School
2	Georgetown	Polk ..	200 00	100 00		100 00	School
Jt. 1	Lincoln and Amery	Polk ..	1,880 00	235 00		1,645 00	School
4	Alden	Polk ..	495 00	55 00		440 00	School
2	Johnston	Polk ..	560 00	140 00		420 00	School
3	Osceola	Polk ..	250 00	50 00		200 00	School
3	Black Brook	Polk ..	600 00	100 00		500 00	School
1	Eureka	Polk ..	500 00	100 00		400 00	School
6	Lorraine	Polk ..			800 00	800 00	School
2	Grant	Portage..	150 00	50 00		100 00	School
5	Eau Plaine	Portage..	68 75	68 75			School
Jt. 1	Almond, Pine Grove, (Plainfield and Oasis Washara Co.)	Portage..	400 00	100 00		300 00	School
3	Carson	Portage..	333 32	83 34		249 98	School
11	Stockton	Portage..	50 00	25 00		25 00	School
6	Carson	Portage..	333 33	66 67		266 66	School
7	Amherst	Portage..	900 00	100 00		800 00	School

Loans.

No.	Name of district.	County.	Out-standing Sept. 30, 1896.	Princi-pal paid in 1897.	New Loans made in 1897.	Out-standing Sept. 30, 1897.	Fund.
14	Stockton.....	Portage..	\$300 00	\$75 00		\$225 00	School
Jt 6	Plover.....	Portage..	318 00	53 00		265 00	School
Jt 16	Carson (Sherry, Wood Co).....	Portage..					
1	Grant.....	Portage..	600 00	75 00		525 00	School
9	Plover.....	Portage..	1,200 00			1,200 00	School
Jt. 6	Belmont and Almond.	Portage..	600 00			600 00	School
2	Carson.....	Portage..	600 00			600 00	School
7	Buena Vista.....	Portage..			\$250 00	250 00	School
Jt. 5	Carson et al (See Wood Co).....	Portage..					
Jt. 4	Lanark and Buena Vista.....	Portage..					
2	Georgetown.....	Price....	200 00	200 00			School
9	Ogema.....	Price....	100 00	100 00			School
2	Lake.....	Price....	1,600 00	200 00		1,400 00	School
3	Akan.....	Richland	99 20	50 00		49 20	School
3	Bloom.....	Richland	316 66	158 33		158 33	School
Jt 10	Westford (Woodland, see Sauk Co.).....	Richland					
Jt 9	Forest (Liberty, see Vernon Co.).....	Richland					
Jt. 8	Westford (Ironton, see Sauk Co.).....	Richland	600 00			600 00	School
4	Westford.....	Richland	700 00			700 00	School
Jt. 2	Clinton town and vil.	Rock....	2,000 00	2,000 00			School
Jt.13	Union et al. (see Green Co.).....	Richland					
5	Richmond.....	Shawano	40 00	20 00		20 00	School
7	Birnamwood.....	Shawano	540 00	180 00		360 00	School
Jt. 4	Green Valley.....	Shawano	200 00	50 00		150 00	School
Jt. 5	Navarino (Matteson, see Waupaca Co.).....	Shawano					
7	Wittenberg.....	Shawano	143 00	70 00		70 00	School
3	Aniwa.....	Shawano	157 50	37 50		150 00	School
5	Hutchins.....	Shawano	217 16	54 23		162 88	School
2	Fairbanks.....	Shawano	2,800 00	400 00		2,400 00	School
2	Wittenberg.....	Shawano	150 00	50 00		100 00	School
5	Washington.....	Shawano	166 66	166 66			
1	Richmond.....	Shawano	380 00	95 00		285 00	School
3	Green Valley.....	Shawano	600 00	100 00		500 00	School
1	Morris.....	Shawano	360 00	90 00		270 00	School
Jt. 1	Richmond and Herm'n	Shawano	400 00	100 00		300 00	School
4	Angelica.....	Shawano	400 00	50 00		350 00	School
Jt 1	Lesser, Angelica, Hart-la'd and Maple Gr'Ve	Shawano	400 00	80 00		320 00	School
2	Angelica.....	Shawano	350 00	116 67		233 33	School
1	Wittenberg.....	Shawano	800 00	80 00		720 00	School
6	Richmond.....	Shawano	500 00			500 00	School
Jt. 3	Maple Grove (Pittsfi'd, Brown Co.).....	Shawano	1,000 00	100 00		900 00	School
7	Birnamwood.....	Shawano	1,000 00	100 00		900 00	School
6	Hutchins.....	Shawano			550 00	550 00	School
Jt. 6	Maple Grove (Pittsfi'd, Brown Co.).....	Shawano		41 60	416 00	374 40	School
7	Richmond.....	Shawano			375 00	375 00	School
Jt. 6	Angelica, Green Valley (N. & S. Chase, Oconto Co.).....	Shawano			500 00	500 00	School
3	Germania.....	Shawano			300 00	300 00	School
3	Wittenberg.....	Shawano			4,200 00	4,200 00	School
6	Birnamwood.....	Shawano			1,000 00	1,000 00	School
6	Stanton.....	St. Croix	80 00	80 00			School
Jt. 1	Richmond, Star Prairie and Stanton.....	St. Croix	2,800 00	700 00		2,100 00	School
Jt. 1	Hammond city and vil.	St. Croix	1,140 00	285 00		855 00	School
Jt. 1	Richmond, Star Prairie and Stanton.....	St. Croix	2,000 00			2,000 00	School

Loans.

No.	Name of district.	County.	Out-standing Sept. 30, 1896.	Princi- pal paid in 1897.	New loans made in 1897.	Out- standing Sept 30, 1897.	Fund.
1	Somerset.....	St. Croix	\$200 00	\$100 00		\$100 00	School
3	Eau Galle.....	St. Croix	400 00	100 00		300 00	School
1	Kinnickinnic.....	St. Croix	400 00	100 00		300 00	School
1	Glenwood.....	St. Croix	7,500 00	1,500 00		6,000 00	School
2	Warren.....	St. Croix	200 00	100 00		100 00	School
Jt. 1	Springfield and Cady..	St. Croix	200 00	100 00		100 00	School
Jt. 3	Cady and Springfield..	St. Croix	300 00	50 00		250 00	School
Jt. 5	Stanton and Star Pra'e.	St. Croix	600 00			600 00	School
Jt. 7	Glenwood (Tiffany, Dunn Co.).....	St. Croix	700 00	233 34		466 66	School
Jt. 1	Hammond village and town.....	St. Croix	800 00			800 00	School
2	Glenwood.....	St. Croix	500 00			500 00	School
Jt. 5	Stanton and Star Pra'e.	St. Croix	400 00	40 00		360 00	School
2	Stanton.....	St. Croix			\$1,200 00	1,200 00	School
7	Somerset.....	St. Croix			400 00	400 00	School
Jt. 1	Cady (Lucas, Dunn Co)	St. Croix			500 00	500 00	School
Jt.10	Woodland (Westford, Richland Co.).....	Sauk	83 85	83 35		02	School
2	Spring Green.....	Sauk	1,200 00	300 00		900 00	School
Jt. 2	La Valle Town and Vil.	Sauk	800 00	100 00		700 00	School
Jt. 8	Ironton (see Westford, Richland Co.).....	Sauk					School
14	Holland.....	Sh'b'yg'n	1,300 00			1,300 00	School
4	Pine Creek.....	Taylor	320 00	30 00		240 00	School
7	Deer Creek.....	Taylor	250 00	25 00		100 00	School
4	Little Black.....	Taylor	120 00	20 00		93 75	School
5	Deer Creek.....	Taylor	125 00	31 25		50 00	School
8	Medford.....	Taylor	100 00	50 00		80 00	School
Jt. 1	Grover and Molitor....	Taylor	160 00	80 00		80 00	School
2	Pine Creek.....	Taylor	420 00	140 00		280 00	School
Jt. 1	Medford City and Town	Taylor	2,000 00	500 00		1,500 00	School
Jt. 1	Medford City and Town	Taylor	1,002 00	250 00		752 00	School
3	Grover.....	Taylor	300 00	100 00		200 00	School
1	Rib Lake.....	Taylor	1,120 00	280 00		840 00	N'r'm'l
4	Grover.....	Taylor	325 00	65 00		260 00	School
5	Chelsea.....	Taylor	300 00	100 00		200 00	School
4	Hale.....	Trempl'u	40 00	40 00			School
Jt. 2	Etrick and Gale.....	Trempl'u	500 00	100 00			School
Jt. 2	Hale, Unity and Sum- ner.....	Trempl'u	120 00	120 00		400 00	School
1	Trempealeau.....	Trempl'u	1,250 00	250 00		1,000 00	School
2	Sumner.....	Trempl'u	277 80	55 56		222 24	School
1	Albion.....	Trempl'u	300 00	100 00		200 00	School
13	Trempealeau.....	Trempl'u	300 00	100 00		200 00	School
1	Lincoln.....	Trempl'u	3,500 00	500 00		3,000 00	School
1	Sumner.....	Trempl'u	880 00	110 00		770 00	School
Jt. 8	Arcadia (Glencoe, Buf- falo Co.).....	Trempl'u	375 00	75 00		300 00	School
6	Hale.....	Trempl'u	270 00	30 00		240 00	School
4	Pigeon.....	Trempl'u	500 00	62 50		437 50	School
5	Pigeon.....	Trempl'u	400 00	50 00		350 00	School
Jt. 5	Etrick (Franklin, Jackson Co.).....	Trempl'u	375 00			375 00	School
Jt. 1	Hale, Pigeon and Lin- coln).....	Trempl'u			350 00	350 00	School
Jt.13	Clinton and Webster..	Vernon..	200 00	100 00		100 00	School
Jt. 5	Liberty and Webster..	Vernon..	150 00	50 00		100 00	School
7	Union.....	Vernon..	200 00	50 00		150 00	School
4	Coon.....	Vernon..	100 00	50 00		50 00	School
Jt. 1	Jefferson and Viroqua.	Vernon..	700 00	100 00		600 00	School
Jt. 8	Sterling, Harmony and Jefferson.....	Vernon..	130 00	65 00		65 00	School
Jt. 1	Jefferson and Viroqua	Vernon..	320 00	40 00		280 00	School
Jt. 9	Liberty (Forest, Rich- land Co.).....	Vernon..	2,345 00			2,345 00	School
7	Christiana.....	Vernon..	1,620 00	180 00		1,440 00	School

Loans.

No.	Name of district.	County.	Out-standing Sept. 30, 1896.	Princi-pal paid in 1897.	New loans made in 1897.	Out-standing Sept. 30, 1897.	Fund.
Jt. 9	Forest, Union, Whites-town and Stark.....	Vernon..	\$800 00	.....	.....	\$800 00	School
7	Forest	Vernon..	300 00	\$100 00	.....	200 00	School
3	Jefferson	Vernon..	200 00	50 00	.....	150 00	School
Jt. 5	Viroqua and Jefferson.	Vernon..	500 00	100 00	.....	400 00	School
15	Stark	Vernon..	1,000 00	100 00	.....	900 00	School
Jt. 6	Jefferson and Coon.....	Vernon..	400 00	80 00	.....	320 00	School
5	Bergen	Vernon..	600 00	200 00	.....	400 00	School
Jt. 6	Jefferson and Coon.....	Vernon..	125 00	.....	.....	125 00	School
5	Hillsboro	Vernon..	.....	.....	\$500 00	500 00	School
	Eagle River School Di-rectors	Vilas	3,000 00	1,500 00	.....	1,500 00	School
	Eagle River School Di-rectors	Vilas	4,800 00	1,600 00	.....	3,200 00	School
	Minocqua School Di-rectors	Vilas	1,800 00	900 00	.....	900 00	School
	Minocqua Town	Vilas .....	.....	.....	1,000 00	1,000 00	School
3	Walworth	Walw'th	1,400 00	200 00	.....	1,200 00	School
	Veazie School Direct'rs	Washb'n	300 00	100 00	.....	200 00	School
2	Shell Lake	Washb'n	3,000 00	600 00	.....	2,400 00	School
3	Bashaw	Washb'n	100 00	50 00	.....	50 00	School
	Veazie School Direct'rs	Washb'n	260 00	130 00	.....	130 00	School
Jt. 1	Bashaw and Shell L'ke	Washb'n	1,500 00	500 00	.....	\$1,000 00	School
	Veazie Sch. Directrs...	Washb'n	400 00	100 00	.....	300 00	School
	Minong Sch. Directors	Washb'n	250 00	250 00	.....	.....	School
1	Genesee	Wa'k'ha	1,400 00	140 00	.....	1,260 00	School
Jt. 1	Larabee and Matteson	Waup'ca	50 00	50 00	.....	.....	School
Jt. 4	Mattison (Navarino, Shawano Co.).....	Waup'ca	100 00	50 00	.....	50 00	School
4	Harrison	Waup'ca	200 00	50 00	.....	150 00	School
Jt. 2	Mattison	Waup'ca	500 00	100 00	.....	400 00	School
Jt. 1	Farmington and Scan-dinavia	Waup'ca	500 00	.....	.....	500 00	School
1	City of Clintonville....	Waup'ca	9,000 00	.....	.....	9,000 00	School
6	Little Wolf	Waup'ca	4,166 00	416 60	.....	3,749 40	School
5	Mattison	Waup'ca	495 00	99 00	.....	396 00	School
Jt. 1	Mattison	Waup'ca	.....	.....	300 00	300 00	School
Jt. 1	Wautoma and Dakota	W'shara.	1,250 00	250 00	.....	1,000 00	School
Jt. 2	Plainfield et al (See Portage Co.)	W'shara.	895 00	179 00	.....	716 00	School
Jt. 1	Rose and Springwater	W'shara.	1,000 00	200 00	.....	800 00	School
11	Leon and Saxville....	W'shara.	.....	.....	225 00	225 00	School
	Hancock	W'n'b'go	6,000 00	1,000 00	.....	5,000 00	School
4	Omro, first loan	W'n'b'go	2,000 00	.....	.....	2,000 00	School
5	Milladore	Wood ...	250 00	50 00	.....	200 00	.....
3	Milladore	Wood ...	100 00	50 00	.....	50 00	.....
5	Saratoga	Wood ...	100 00	50 00	.....	50 00	.....
4	Saratoga	Wood ...	100 00	50 00	.....	50 00	.....
4	Remington	Wood ...	200 00	100 00	.....	100 00	.....
5	Siegel	Wood ...	292 02	48 67	.....	243 35	.....
Jt. 1	Wood and Pittsville ..	Wood ...	300 00	100 00	.....	200 00	.....
Jt. 6	Nekoosa Village	Wood ...	1,050 00	150 00	.....	900 00	.....
	Sherry (Carson, Por-tage Co.)	Wood ...	400 00	100 00	.....	300 00	.....
3	Auburndale	Wood ...	150 00	75 00	.....	75 00	.....
3	Rock	Wood ...	600 00	100 00	.....	500 00	.....
1	Marshall City	Wood ...	4,000 00	.....	.....	4,000 00	.....
Jt. 5	Milladore (Carson, Portage Co.)	Wood ...	475 00	95 00	.....	380 00	.....
4	Remington	Wood ...	600 00	100 00	.....	500 00	.....
Jt. 2	Auburndale (Day, Marathon Co.)	Wood ...	.....	.....	400 00	400 00	.....
	Totals		\$395,507 37	\$64,640 21	\$123,278 25	\$454,145 41	

Loans.

No.	Name of district.	County.	Out-standing Sept. 30, 1897.	Princi- pal paid in 1898.	New loans made in 1898.	Out- standing Sept. 30, 1897.	Fund.
2	Monroe	Adams ..	\$175 00	\$87 50	.....	\$87 50	School
Jt. 1	Linc'ln and New Ch's'r	Adams ..	200 00	100 00	.....	100 00	School
Jt. 1	Strongs Prairie and	Adams ..	150 00	50 00	.....	100 00	School
3	Monroe	Adams ..	125 00	25 00	.....	100 00	School
Jt.10	Jackson and New	Adams ..	400 00	100 00	.....	300 00	School
2	Haven	Adams ..	175 00	.....	.....	175 00	School
Jt. 2	Leola	Adams ..	.....	.....	\$300 00	300 00	School
6	Richfield and Colburn	Adams ..	.....	.....	.....	125 00	School
6	Butternut	Ashland.	250 00	125 00	.....	.....	School
Jt. 1	Morse School Direct'rs	Ashland.	.....	.....	4,000 00	4,000 00	School
2	Barron City and Town	Barron..	250 00	250 00	.....	.....	.....
2	Dallas	Barron..	55 00	55 00	.....	.....	.....
Jt. 3	Oak Grove and St'n'ld	Barron..	78 57	78 57	.....	.....	.....
2	Maple Grove	Berron..	150 00	30 00	.....	120 00	School
Jt. 1	Stanford, Stanley and	Barron..	440 00	88 00	.....	352 00	School
3	Barron	Barron..	325 00	81 25	.....	243 75	School
4	Stanley	Barron..	50 00	50 00	.....	.....	.....
Jt. 1	Maple Grove	Barron..	85 00	85 00	.....	.....	.....
1	Turtle Lake	Barron..	.....	.....	.....	.....	.....
Jt. 1	Turtle Lake, Beaver	Barron..	.....	.....	.....	.....	.....
	and Johnson (see Polk	Barron..	.....	.....	.....	.....	.....
	Co.)	Barron..	500 00	100 00	.....	400 00	School
5	Prairie Farm	Barron..	300 00	100 00	.....	200 00	School
10	Cumberland	Barron..	168 00	42 00	.....	126 00	School
9	Turtle Lake	Barron..	120 00	30 00	.....	90 00	School
3	Sumner	Barron..	243 75	81 25	.....	162 50	School
8	Turtle Lake	Barron..	350 00	70 00	.....	280 00	School
3	Turtle Lake	Barron..	600 00	.....	.....	600 00	School
1	Cumberland	Barron..	240 00	.....	.....	240 00	School
11	Cumberland	Barron..	.....	.....	200 00	200 00	School
Jt. 6	Barron and Stanford..	Barron..	.....	.....	270 00	270 00	School
8	Stanford	Barron..	.....	.....	250 00	250 00	School
5	Clinton	Barron..	.....	.....	.....	.....	.....
1	Iron School Directors.	Bayfield	1,133 33	1,133 34	.....	.....	.....
6	Washburn School Di-	Bayfield	15,000 00	2,500 00	.....	12,500 00	School
1	rectors	Bayfield	1,500 00	500 00	.....	1,000 00	School
1	Iron River School Di-	Bayfield	7,000 00	1,000 00	.....	6,000 00	School
6	rectors	Bayfield	20,000 00	2,500 00	.....	17,500 00	School
1	Bayfield	Bayfield	83 34	83 34	.....	.....	School
6	Lawrence	Brown ..	1,120 00	140 00	.....	980 00	N'rm'l
2	Howard	Brown ..	.....	.....	.....	.....	.....
Jt. 3	Pittsfield and Maple	Brown ..	.....	.....	.....	.....	.....
	Grove (see Shawano	Brown ..	.....	.....	.....	.....	.....
Jt. 6	Co.)	Brown ..	.....	.....	.....	.....	.....
	Pittsfield and Maple	Brown ..	.....	.....	.....	.....	.....
	Grove (see Shawano	Brown ..	.....	.....	.....	.....	.....
	Co.)	Buffalo..	100 00	50 00	.....	50 00	School
4	Buffalo	Buffalo..	660 00	220 00	.....	440 00	School
5	Nelson	Buffalo..	.....	.....	.....	.....	.....
Jt. 8	Glencoe and Arcadia	Buffalo..	.....	.....	200 00	.....	.....
	(see Trempe'au Co.)	Buffalo..	.....	.....	.....	.....	.....
Jt. 1	Mondovi and Naples..	Buffalo..	.....	.....	.....	.....	.....
10	(see Trempe'au Co.)	Burnett..	11 66	11 66	.....	.....	School
5	Grantsburg	Burnett..	350 00	50 00	.....	300 00	School
5	Rusk	Burnett..	.....	.....	300 00	300 00	School
6	Wood Lake	Burnett..	.....	.....	140 00	140 00	School
5	Wood Lake	Burnett..	.....	.....	100 00	100 00	School
6	Rusk	Burnett..	400 00	100 00	.....	300 00	School
5	Chilton	Calumet.	750 00	250 00	.....	500 00	School
7	Brillion	Calumet.	20 00	20 00	.....	.....	.....
5	Anson	Chip'wa.	100 00	100 00	.....	.....	.....
15	Big Bend	Chip'wa.	212 50	212 50	.....	.....	School
10	Edson	Chip'wa.	230 00	100 00	.....	100 00	School
6	Arthur	Chip'wa.	200 00	100 00	.....	100 00	School
7	Arthur	Chip'wa.	400 00	100 00	.....	300 00	School
3	Edson	Chip'wa.	.....	.....	.....	.....	.....

Loans.

No.	Name of district.	County.	Out-standing Sept. 30, 1897.	Princi-pal paid in 1898.	New loans made in 1898.	Out-standing Sept. 30, 1898.	Fund.
8	Big Bend	Chip'wa.	\$600 00	\$100 00		\$500 00	School
11	Edson	Chip'wa.	3,600 00	400 00		3,200 00	School
7	Wheaton	Chip'wa.	350 00	50 00		300 00	School
9	Edson	Chip'wa.	800 00	80 00		720 00	School
8	Edson	Chip'wa.	600 00	75 00		525 00	School
14	Big Bend	Chip'wa.	650 00	650 00			School
7	Edson	Chip'wa.	600 00	60 00		540 00	School
6	La Fayette	Chip'wa.	200 00	50 00		150 00	School
2	Auburn	Chip'wa.			\$200 00	200 00	School
3	Wheaton	Chip'wa.		110 00	1,100 00	990 00	School
Jt. 2	Edson and Vil. of Boyd	Chip'wa.			3,000 00	3,000 00	School
13	Edson	Chip'wa.			500 00	500 00	School
Jt. 3	Mayville and Hoard ..	Clark ..	40 00	40 00			School
Jt. 3	Green Grove and Colby	Clark ..	200 00	100 00		100 00	School
Jt. 4	Hoard and Mayville...	Clark ..	100 00	50 00		50 00	School
2	Pine Valley	Clark ..	300 00	50 00		250 00	School
2	Loyal	Clark ..	1,050 00	150 00		900 00	School
4	Unity	Clark ..	150 00	50 00		100 00	School
Jt. 1	Eaton, Warren and	Clark ..	500 00	500 00			School
2	Greenwood	Clark ..	300 00	100 00		200 00	School
3	Withee	Clark ..	165 67	166 67			School
5	Thorpe	Clark ..	285 72	57 14		228 58	Norm'l
Jt. 5	Unity (Brighton,	Clark ..	83 33	41 67		41 66	School
2	Marathon Co	Clark ..	400 00	100 00		300 00	School
Jt. 3	Hewitt	Clark ..	700 00	100 00		600 00	School
2	York and Grant	Clark ..	666 67	333 33		333 34	School
2	Hixon	Clark ..	500 00	100 00		400 00	School
2	Green Grove	Clark ..	800 00	160 00		640 00	School
1	Lynn	Clark ..	700 00	100 00		600 00	School
Jt. 1	Colby, City and Town	Clark ..	440 00	88 00		352 00	School
6	(Hull, Marathen Co)	Clark ..	712 25	118 71		593 54	School
4	Levis	Clark ..	500 00	100 00		400 00	School
1	Hixon	Clark ..	1,800 00	300 00		1,500 00	School
Jt. 1	Weston	Clark ..	200 00			200 00	School
3	Thorp and Withee and	Clark ..			255 00	255 00	School
2	Villages of Thorp ..	Clark ..			600 00	600 00	School
Jt. 2	Hewitt	Clark ..					School
2	Lynn	Clark ..					School
Jt. 1	Colby and Green Grove	Clark ..					School
Jt. 1	Mayville, Colby and	Clark ..					School
5	Village of Abbots'rd	Clark ..					School
Jt. 5	(Hull and Holeton,	Clark ..			1,100 00	1,100 00	School
1	Marathon Co.)	Col'mbia					School
Jt. 5	Leeds (Vienna, Wind-	Col'mbia	400 00	100 00		300 00	School
1	sor) (see Dane Co.) ..	Col'mbia					School
Jt. 5	DeKorra	Col'mbia			1,500 00	1,500 00	School
Jt. 5	Vil. of Rio, Otsego and	Col'mbia			7,000 00	7,000 00	School
Jt. 2	Lowville	Col'mbia					School
7	Randolph, Courtland	Crawfo'd	240 00	60 00		180 00	School
Jt. 1	and Springvale	Crawfo'd	600 00	100 00		500 00	School
Jt. 11	Scott	Crawfo'd	1,080 00	120 00		960 00	School
Jt. 2	Freeman and Seneca ..	Crawfo'd	300 00	50 00		250 00	School
Jt. 4	Utica and Clayton ..	Crawfo'd			2,500 00	2,250 00	School
6	Easton and Marietta ..	Crawfo'd			400 00	400 00	School
11	Clayton and vil. Sold-	Crawfo'd					School
12	iers Grove	Crawfo'd		250 00			School
4	Clayton	Dane ..	766 66	383 33		383 33	School
11	Madison	Dane ..	500 00	500 00			School
12	Middleton	Dane ..	200 00	200 00			School
4	Springdale	Dane ..					School
Jt. 5	Windsor, Vienna, Leeds	Dane ..	499 00	500 00			Norm'l
Jt. 11	Columbia Co.)	Dane ..					School
5	Perry et al. (see Iowa	Dane ..	400 00	200 00		200 00	School
1	Co.)	Dane ..	8,100 00	900 00		7,200 00	School
Jt. 6	Albion	Dane ..	566 67	283 34		283 33	School
1	Oregon	Dane ..					School
Jt. 6	Middleton and Madis'n	Dane ..					School

Loans.

No.	Name of district.	County.	Out-standing Sept. 30, 1897.	Princi- pal paid in 1897.	New loans made in 1898.	Out- standing Sept. 30, 1898.	Fund.
Jt. 1	Windsor and Burke...	Dane...	\$325 00	\$162 50		\$162 50	School
1	Oregon	Dane ...	1,000 00	100 00		900 00	School
Jt. 5	Christiana (Oakland, Jefferson Co.)	Dane	1,300 00			1,300 00	School
1	Blue Mounds	Dane ...	2,400 00	300 00		2,100 00	School
Jt.13	Brooklyn et al. (see Green Co.)	Dane					
7	Oak Grove	Dodge...	1,000 00	500 00		500 00	School
Jt. 9	Beaver Dam and Lowell	Dodge...	375 00	125 00		250 00	School
Jt.	Williamstown and city of Mayville Free High School	Dodge			\$5,000 00	5,000 00	School
3	Washington	Door	46 84	46 86			
5	Nasewaupsee	Door	112 50	56 25		56 25	School
2	Egg Harbor	Door	500 00			500 00	School
2	Clay Banks	Door	250 00	50 00		200 00	School
2	Jacksonport	Door	281 25	93 75		187 50	School
Jt. 3	Nasewaupsee and Stur- geon Bay	Door	775 55	94 45		661 10	School
8	Sevastopol	Door			650 00	650 00	School
3	Gibraltar	Door			400 00	400 00	School
	Brule School Directors	Douglas.	500 00			500 00	School
	Brule School Directors	Douglas.	500 00			500 00	School
	Superior Sch. Direct'rs	Douglas.	3,000 00	500 00		2,500 00	School
	Nebagamain School Directors	Douglas.	500 00	250 00		250 00	School
3	Colfax	Dunn	200 00	100 00		100 00	School
7	Spring Brook	Dunn	120 00	40 00		80 00	School
1	Tiffany	Dunn	300 00	100 00		200 00	School
9	Menomonie	Dunn	150 00	50 00		100 00	School
Jt. 8	Stanton and Tiffany...	Dunn	90 00	90 00			School
5	Sherman	Dunn	300 00	100 00		200 00	School
4	Elk Mound	Dunn	125 00	125 00			School
2	Colfax	Dunn	120 00	40 00		80 00	School
Jt. 4	Otter Creek, Colfax, Grant and Taintor ..	Dunn	187 50	37 50		150 00	School
4	Colfax	Dunn	150 00	50 00		100 00	School
4	Stanton	Dunn	200 00	100 00		100 00	School
4	Lucas	Dunn	200 00	100 00		100 00	School
5	Hay River	Dunn	247 50	27 50		220 00	School
Jt. 8	Stanton and Tiffany...	Dunn	150 00			150 00	School
2	Grant	Dunn	100 00			100 00	School
Jt. 1	Lucas et al. (see St. Croix Co.)	Dunn					
3	Otter Creek	Dunn			300 00	300 00	School
4	Weston	Dunn			600 00	600 00	School
Jt. 6	Tainter and Otter Cr'k Eau Claire City	Eau Cl're	30,000 00	2,000 00		28,000 00	School
5	Brunswick	Eau Cl're	400 00	100 00		300 00	School
1	Commonwealth	Florence	800 00	200 00		600 00	School
12	Metomen	F'd du L.	6,000 00	1,000 00		5,000 00	School
3	Wingville High School	Grant	5,000 00			5,000 00	School
2	Fennimore	Grant	4,365 00			4,365 00	School
4	Platteville	Grant	2,000 00	500 00		1,500 00	School
Jt.17	Lancaster, Beeton and Little Grant	Grant	300 00			300 00	School
Jt.11	Castle Rock and Wing- ville	Grant		20 00	200 00	180 00	School
Jt. 1	Boscobel, Marion and Watterstown	Grant			9,000 00	9,000 00	School
Jt.10	Lima and Ellenboro ..	Grant			400 00	400 00	School
3	Mt. Pleasant	Green	800 00	400 00		400 00	School
Jt.11	York et al. (see Iowa Co.)	Green					School
1	New Glarus	Green	5,000 00	1,000 00		4,000 00	School
Jt.13	Brooklyn Rutland, Ore- gon and Union	Green			3,000 00	3,000 00	School

Loans.

No.	Name of district.	County.	Out-standing Sept. 30, 1897.	Princi-pal paid in 1898.	New loans made in 1898.	Out-standing Sept. 30, 1898.	Fund.
Jt.11	Moscow (Perry and York, Dane Co.)	Iowa	\$350 00	\$50 00		\$300 00	School
Jt. 1	Moscow et al. (see Lafayette Co.)	Iowa					
9	Moscow	Iowa	500 00	100 00		400 00	School
1	Moscow	Iowa	1,920 00	180 00		1,440 00	School
4	Saxon School Direct'rs	Iron	2,500 00	500 00		2,000 00	School
Jt. 3	Vaughn	Iron	600 00			600 00	School
	Garden Valley, Northfield, Hixton and Curran	Jackson.	143 00	72 00		71 00	School
3	Albion	Jackson.	73 90	73 90			
1	Northfield	Jackson.	100 00	50 00		50 00	School
4	Garfield	Jackson.	50 00	50 00			
4	Garden Valley	Jackson.	100 00	20 00		80 00	School
3	Alma	Jackson.	325 00	108 33		216 67	School
Jt. 5	Northfield	Jackson.	200 00	50 00		150 00	School
Jt. 4	Springfield and Curran	Jackson.	400 00	100 00		300 00	School
Jt. 4	Hixton and Curran	Jackson.	1,400 00	200 00		1,200 00	School
Jt. 4	Springfield	Jackson.	400 00	100 00		300 00	School
Jt. 5	Hixton and Curran	Jackson.	720 00	120 00		600 00	School
Jt. 1	Franklin et al. (see Trempealeau Co.)	Jackson.					
Jt. 1	Albion and Black Riv. Falls.	Jackson.	8,000 00			8,000 00	School
Jt. 1	Albion and Black Riv. Falls.	Jackson.	2,000 00			2,000 00	School
Jt. 5	Northfield and Garden Valley	Jackson.			400 00	400 00	School
Jt.10	Hixton and Albion	Jackson.			200 00	200 00	School
Jt. 4	Sullivan and Concord.	Jeff'son	400 00	400 00			
1	Palmyra	Jeff'son	8,800 00			8,800 00	School
Jt. 8	Aztalan and Fa'mi'g'n.	Jeff'son	3,500 00	350 00		3,150 00	School
1	Waterloo Village	Jeff'son	8,000 00	1,000 00		7,000 00	Norm'l
Jt. 5	Oakland (see Christiana, Dane County).						
4	Armenia	Juneau.	150 00	75 00		75 00	School
3	Clearfield	Juneau.	80 00	20 00		60 00	School
5	Armenia	Juneau.	140 00	35 00		105 00	School
3	Kingston	Juneau.	240 00	60 00		180 00	School
6	Armenia	Juneau.	300 00	50 00		250 00	School
2	Armenia			57 15	400 00	342 85	School
7	Armenia				530 00	530 00	School
1	Carlton	Kewa'n'e	466 67	233 33		233 34	School
4	Carlton	Kewa'n'e	500 00	166 67		333 33	School
Jt. 1	Ahnapee city and town.	Kewa'n'e	2,000 00			2,000 00	School
6	Campbell	LaCros'e	292 50	97 50		195 00	School
6	Campbell	LaCros'e	400 00	100 00		300 00	School
5	Campbell	LaCros'e			1,000 00	1,000 00	School
7	Onalaska	LaCros'e		200 00		600 00	School
Jt. 1	Blanchard (Moscow, Iowa County)	La Fay'e	400 00	100 00		300 00	School
2	New Diggings	La Fay'e	450 00	150 00		300 00	School
9	Willow Springs	La Fay'e			400 00	400 00	School
1	New Diggings	La Fay'e			600 00	600 00	School
9	Willow Springs	La Fay'e			276 00	276 00	School
2	Summit	Lan't'de.	60 00	30 00		30 00	School
2	Summit	Lan't'de.	44 00	22 00		22 00	School
2	Rolling	Lan't'de.	210 00	30 00		180 00	School
5	Norwood	Lan't'de.	200 00	10 00		190 00	School
2	Langlade	Lan't'de.	500 00	125 00		375 00	School
1	Rolling	Lan't'de.	405 00	45 00		360 00	School
4	Rolling	Lan't'de.		96 00	960 00	864 00	School
5	Norwood	Lan't'de.		32 00	320 00	288 00	School
3	Norwood	Lan't'de.			250 00	250 00	School
Jt. 3	Rock Falls	Lincoln.	1,333 00	666 50		666 50	School
3	Harrison	Lincoln.	76 60	76 60			School
5	Russell	Lincoln.	200 00	100 00		100 00	School

Loans.

No.	Name of district.	County.	Out-standing Sept. 30, 1897.	Princi-pal paid in 1898.	New loans made in 1898.	Out-standing Sept. 30, 1898.	Fund.
3	Merrill School Dire'trs	Lincoln.	\$1,200 00	\$300 00		\$900 00	School
4	Harrison	Lincoln.	500 00	100 00		400 00	School
4	Scott				\$400 00	400 00	School
2	Eaton	M'n't'w'c	375 00	125 00		250 00	School
Jt. 4	Manitowoc City	M'n't'w'c	\$,000 00	2,000 00		6,000 00	
Jt. 4	Manitowoc Town and City	M'n't'w'c	5,000 00			5,000 00	
4	McMillan	Mar't'on	150 00	50 00		100 00	School
1	Wein	Mar't'on	200 00	50 00		150 00	School
Jt. 1	Brighton and Unity (see Clark Co.)	Mar't'on					
Jt. 2	Frankfort and Hull	Mar't'on	200 00	50 00		150 00	School
2	Harrison	Mar't'on	50 00	50 00			
4	Frankfort	Mar't'on	195 55	48 89		146 66	School
1	Plover	Mar't'on	66 66	66 66			
4	Holeton	Mar't'on	40 00	40 00			
2	Easton	Mar't'on	180 00	30 00		150 00	School
Jt. 9	Wausau and Texas	Mar't'on	275 00	55 00		220 00	School
13	Mosinee	Mar't'on	50 00	50 00			
5	Cleveland	Mar't'on	192 00	96 00		96 00	School
4	Eau Plaine	Mar't'on	100 00	100 00			
1	Kronenwetter	Mar't'on	200 00	100 00		100 00	School
Jt. 6	Wein and Cassell	Mar't'on	381 50	54 50		327 00	School
Jt. 3	Harrison and Plover	Mar't'on	250 00	50 00		200 00	School
2	Eau Plaine	Mar't'on	250 00	50 00		200 00	School
4	Wein	Mar't'on	300 00	100 00		200 00	School
1	Hull	Mar't'on	400 00	50 00		350 00	School
1	Bergen	Mar't'on	180 00	60 00		120 00	School
1	Hull	Mar't'on	220 00	27 50		192 50	School
5	Day	Mar't'on	480 00	60 00		420 00	School
3	Marathon	Mar't'on	300 00	100 00		200 00	School
Jt. 5	Brighton and Unity (see Clark Co.)	Mar't'on					
2	Halsey	Mar't'on	220 00	55 00		165 00	School
1	McMillan	Mar't'on	360 00	120 00		240 00	School
1	Day	Mar't'on	250 00	50 00		200 00	School
5	Eldron	Mar't'on	270 00	30 00		240 00	School
3	Frankfort	Mar't'on	540 00	60 00		480 00	School
5	Frankfort	Mar't'on	360 00	40 00		320 00	School
Jt. 1	Hull et al. (see Clark Co.)	Mar't'on					
Jt. 2	Day et al. (see Wood Co.)	Mar't'on					
4	Easton	Mar't'on	300 00	75 00		225 00	School
1	Norrie	Mar't'on	600 00	200 00		400 00	School
Jt. 6	Wausau and Easton	Mar't'on	300 00			300 00	School
1	Harrison	Mar't'on			250 00	250 00	School
6	Emmett	Mar't'on			250 00	250 00	School
1	Pike Lake	Mar't'on			420 00	420 00	School
Jt. 1	Hull and Holeton (see Clark Co.)	Mar't'on					
2	Peshigo	Marin'te	172 22	172 22			School
10	Coleman	Marin'te	200 00	100 00		100 00	School
11	Coleman	Marin'te	225 00	25 00		200 00	School
7	Peshigo	Marin'te	250 00	25 00		225 00	School
4	Peshigo	Marin'te	500 00	100 00		400 00	School
4	Peshigo	Marin'te	750 00			750 00	School
4	Grover	Marin'te	450 00			450 00	School
5	Coleman	Marin'te	300 00			300 00	School
7	Amberg	Marin'te	300 00			300 00	School
	Crivitz School Direct's	Marin'te		100 00	1,000 00	900 00	School
8	Peshigo	Marin'te			500 00	500 00	School
9	Peshigo	Marin'te			400 00	400 00	School
1	Montello	Marqu'te	5,940 00	680 00		5,260 00	School
Jt. 4	Crystal Lake and Nesh- kora	Marqu'te	200 00	66 67		133 33	School
5	Wauwatosa	Milw'kee	7,000 00	1,000 00		6,000 00	School
Jt.17	Granville and Wauwa- tosa	Milw'kee	\$2,857 14	\$571 43		\$2,285 71	School

Loans.

No.	Name of district.	County.	Out-standing Sept. 30, 1897.	Princi-pal paid in 1898.	New Loans made in 1898.	Out-standing Sept. 30, 1898.	Fund.
4	Milwaukee	Milw'kee	916 66	183 34		733 32	School
Jt. 16	Wauwatosa and Greenfield	Milw'kee	8,000 00	1,000 00		7,000 00	School
8	Wauwatosa	Milw'kee			\$4,960 00	4,960 00	School
2	Byron	Monroe..	75 00	25 00		50 00	School
Jt. 8	Byron and Lincoln	Monroe..	45 00	15 00		30 00	School
8	Lincoln	Monroe..	120 00	15 00		105 00	School
Jt. 2	La Grange, Lincoln & Byron	Monroe..	120 00	30 00		90 00	School
5	Byron	Monroe..	150 00	30 00		120 00	School
3	Wilton	Monroe..	233 33	116 67		116 66	School
2	Wilton	Monroe..			250 00	250 00	School
4	Byron	Monroe..			163 00	163 00	School
1	Stiles	Oconto..	400 00	100 00		300 00	School
6	Maple Valley	Oconto..	200 00	200 00			School
1	Spence	Oconto..	100 00	100 00			School
2	Pensaukee	Oconto..	480 00	240 00		240 00	School
5	Little River	Oconto..	340 80	85 20		255 60	School
Jt. 6	Oconto Falls & Stiles..	Oconto..	260 00	65 00		195 00	School
3	Lena	Oconto..	500 00	125 00		375 00	School
3	Gillett	Oconto..	2,500 00			2,500 00	School
1	Howe	Oconto..	250 00			250 00	School
3	Pensaukee	Oconto..	350 00	35 00		315 00	School
Jt. 6	Chase North & South et al (see Shaw'no Co) Armstrong School Directors.	Oconto..			1,000 00	1,000 00	School
3	Little River	Oconto..			850 00	850 00	School
3	Pensaukee	Oconto..			200 00	200 00	School
	Pelican School Directors	Oneida..	900 00	450 00		450 00	School
	Pelican	Oneida..	900 00	300 00		600 00	School
	Pelican School Directors	Oneida..	3,000 00	500 00		2,500 00	School
	Pelican School Directors	Oneida..	1,800 00	200 00		1,600 00	School
	Pelican School Directors	Oneida..			1,500 00	1,500 00	School
2	City of Appleton	Out'g'me	15,000 00	2,500 00		12,500 00	School
4	Deer Creek	Out'g'me	300 00	100 00		200 00	School
Jt. 3	Black Creek and Osborn	Out'g'me	187 50	62 50		125 00	School
1	Bovina	Out'g'me	400 00			400 00	School
6	Bovina	Out'g'me	350 00			350 00	School
4	Maine	Out'g'me	471 42	78 57		392 85	School
Jt. 2	Kaukauna Town and City	Out'g'me	10,000 00			10,000 00	School
1	City of Appleton	Out'g'me	10,000 00	1,000 00		9,000 00	School
2	City of Appleton	Out'g'me	25,000 00	250 00		24,750 00	School
4	Bovina	Out'g'me	500 00			500 00	School
Jt. 4	Port Washington Tw'n and City	Ozaukee.	2,333 33	466 67		1,866 66	School
4	Albany	Pepin....	160 00	40 00		120 00	School
Jt. 4	Waubeck and Waterville	Pepin....	100 00	100 00			School
9	Waterville	Pepin....			300 00	300 00	School
1	Spring Lake	Pierce...	240 00	120 00		120 00	School
7	Trim Belle	Pierce...	1,000 00	100 00		900 00	School
3	Union	Pierce...	1,040 00	130 00		910 00	School
6	Trimbell	Pierce...	166 66	166 66			School
5	Hartland	Pierce...	375 00	125 00		250 00	School
1	Union	Pierce...	400 00	100 00		300 00	School
8	River Falls	Pierce...	600 00	60 00		540 00	School
Jt. 2	Ellsworth and Hartland	Pierce...			600 00	600 00	School
9	Ellsworth	Pierce...			400 00	400 00	School

Loans.

No.	Name of district.	County.	Out- standing Sept. 30, 1897.	Princi- pal paid in 1898.	New loans made in 1898.	Out- standing Sept. 30, 1898.	Fund.
Jt. 1	Clear Lake and Black Brook	Polk	680 00	170 00		510 00	School
1	Beaver	Polk	50 00	50 00			School
2	Balsam Lake	Polk	300 00	60 00		240 00	School
2	Apple River	Polk	140 00	70 00		70 00	School
2	Georgetown	Polk	100 00	100 00			School
Jt. 1	Lincoln and Amery	Polk	1,645 00	235 00		1,410 00	School
4	Alden	Polk	440 00	55 00		385 00	School
2	Johnston	Polk	420 00	140 00		280 00	School
3	Osceola	Polk	200 00	50 00		150 00	School
3	Black Brook	Polk	500 00	100 00		400 00	School
1	Eureka	Polk	400 00	100 00		300 00	School
6	Loraine	Polk	800 00	266 67		533 33	School
3	St. Croix Falls	Polk			100 00	100 00	School
2	Apple River	Polk			425 00	425 00	School
3	Osceola Village	Polk			4,000 00	4,000 00	School
2	Black Brook	Polk			108 00	108 00	School
Jt. 1	Alden and Osceola	Polk			500 00	500 00	School
2	Grant	Portage	100 00	50 00		50 00	School
Jt. 1	Almond, Pine Grove (Plainfield and Oasis Waushara Co.)	Portage	300 00	100 00		200 00	School
3	Carson	Portage	249 98	83 34		166 64	School
11	Stockton	Portage	25 00	25 00			School
6	Carson	Portage	266 66	66 67		199 99	School
7	Amherst	Portage	800 00	100 00		700 00	School
14	Stockton	Portage	225 00	75 00		150 00	School
6	Plover	Portage	265 00	53 00		212 00	School
Jt.16	Carson and Sherry. (See Wood Co.)	Portage					
1	Grant	Portage	525 00	75 00		450 00	School
9	Plover	Portage	1,200 00	200 00		1,000 00	School
Jt. 6	Belmont and Almond	Portage	600 00	100 00		500 00	School
2	Carson	Portage	600 00	100 00		500 00	School
7	Buena Vista	Portage	250 00	83 33		166 67	School
Jt. 5	Carson et al. (See Wood Co.)	Portage					
Jt. 4	Lanark and Buena Vista	Portage	150 00	75 00		75 00	School
6	Hull	Portage			294 00	294 00	School
Jt. 2	Milladore and Carson	Portage			500 00	500 00	School
2	Lake	Price	1,400 00	200 00		1,200 00	School
2	Knox	Price			400 00	400 00	School
3	Akan	Richland	49 20	49 20			School
3	Bloom	Richland	158 33	158 33			School
Jt.10	Westford et al. (See Sauk Co.)	Richland					School
Jt. 9	Forest et al. (See Vernon Co.)	Richland					School
Jt. 8	Westford (Iron ton, Sauk Co.)	Richland	600 00	200 00		400 00	School
4	Westford	Richland	700 00	175 00		525 00	School
Jt. 3	Dayton and Akan	Richland			350 00	350 00	School
Jt.13	Union, et al (see Green Co.)	Rock					School
7	Richmond	Shawano	20 00	20 00			School
5	Birnamwood	Shawano	360 00	180 00		180 00	School
5	Green Valley	Shawano	150 00	50 00		100 00	School
Jt. 4	Navarino, et al (see Waupaca Co.)	Shawano					
7	Wittenberg	Shawano	70 00	70 00			School
3	Aniwa	Shawano	150 00	37 50		112 50	School
5	Hutchins	Shawano	162 88	54 28		108 60	School
2	Fairbanks	Shawano	2,400 00	400 00		2,000 00	School
2	Wittenberg	Shawano	100 00	50 00		50 00	School
1	Richmond	Shawano	285 00	95 00		190 00	School
3	Green Valley	Shawano	500 00	100 00		400 00	School
1	Morris	Shawano	270 00	90 00		180 00	School

Loans.

No.	Name of district.	County.	Out-standing Sept. 30, 1897.	Princi- pal paid in 1898.	New loans made in 1898.	Out- standing Sept. 30, 1898.	Fund.
Jt. 1	Richmond and Herman	Shawano	\$300 00	\$100 00		\$200 00	School
4	Angelica	Shawano	350 00	50 00		300 00	School
Jt. 1	Lesser, Angelica, Hart- land and Maple Gr'Ve	Shawano	320 00	40 00		280 00	School
2	Angelica	Shawano	233 33	116 67		116 66	School
1	Wittenberg	Shawano	720 00	80 00		640 00	School
6	Richmond	Shawano	500 00	55 58		444 44	School
Jt. 3	Maple Grove(Pittsfi'd, Brown Co.)	Shawano	900 00	100 00		800 00	School
7	Birnamwood	Shawano	900 00	103 00		800 00	School
6	Hutchins	Shawano	550 00	183 33		366 67	School
Jt. 6	Maple Grove(Pittsfi'd, Brown Co.)	Shawano	374 74	41 60		332 80	School
7	Richmond	Shawano	375 00			375 00	School
Jt. 6	Angelica, Green Valley (N. & S. Chase, Oc'nto Co.)	Shawano	500 00	50 00		450 00	School
3	Germania	Shawano	300 00	37 50		262 50	School
3	Wittenberg	Shawano	4,200 00	420 00		3,780 00	School
6	Birnamwood	Shawano	1,000 00	100 00		900 00	School
4	Germania	Shawano		66 67	\$400 00	333 33	School
Jt. 5	Almon, Morris & S'neca Shawano City	Shawano			500 00	500 00	School
Jt. 3	Herman, Grant, Seneca and Pella.	Shawano			4,000 00	4,000 00	School
4	Seneca	Shawano			1,600 00	1,600 00	School
Jt. 1	Richmond, Star Prairie and Stanton	Shawano			300 00	300 00	School
Jt. 1	Hammond City and Village	St. Croix	2,100 00	700 00		1,400 00	School
Jt. 1	Richmond, Star Prairie and Stanton	St. Croix	855 00	285 00		570 00	School
1	Somerset	St. Croix	2,000 00			2,000 00	School
3	Eau Galle	St. Croix	100 00	100 00			School
1	Kinnickinnic	St. Croix	300 00	100 00		200 00	School
1	Glenwood	St. Croix	6,000 00	1,500 00		4,500 00	School
2	Warren	St. Croix	100 00	100 00			School
Jt. 1	Springfield & Cady	St. Croix	100 00	100 00			School
Jt. 3	Cady and Springfield	St. Croix	250 00	50 00		200 00	School
Jt. 5	Stanton and St'r Pr'irie Glenwood (Tiffany, Dunn Co.)	St. Croix	600 00			600 00	School
Jt. 7	Hammond Village and Town	St. Croix	466 66	233 34		233 32	School
2	Glenwood	St. Croix	800 00	100 00		700 00	School
Jt. 5	Stanton and St'r Pr'irie	St. Croix	500 00			500 00	School
2	Stanton	St. Croix	360 00	40 00		320 00	School
7	Somerset	St. Croix	1,200 00	120 00		1,080 00	School
Jt. 1	Cady(Lucas, Dunn Co.)	St. Croix	400 00	100 00		300 00	School
Jt. 8	Glenwood, Emerald, Baldwin and Spring- field	St. Croix	500 00			500 00	School
4	Forest	St. Croix		30 00	300 00	270 00	School
2	Spring Green	St. Croix			305 00	305 00	School
Jt. 2	LaValle Town and Vil- lage.	Sauk	900 00	300 00		600 00	School
Jt. 8	Ironton et al (see Rich- land county.)	Sauk	700 00	100 00		600 00	School
14	Holland	Sh'bog'n.	1,300 00	216 67		1,083 33	School
4	Pine Cre k	Taylor	240 00	80 00		160 00	School
4	Little Black	Taylor	100 00	20 00		80 00	School
5	Deer Creek	Taylor	93 75	31 25		62 50	School
8	Medford	Taylor	50 00	50 00			School
Jt. 1	Grover & Molitor	Taylor	80 00	80 00			School
2	Pine Creek	Taylor	280 00	140 00		140 00	School

Loans.

No.	Name of district.	County.	Out- standing Sept. 30, 1897.	Princi- pal paid in 1898.	New loans made in 1898.	Out- standing Sept. 30, 1898.	Fund.
Jt. 1	Medford City and Town	Taylor...	1,500 00	500 00	.....	1,000 00	School
Jt. 1	Medford City and Town	Taylor...	752 00	250 00	.....	502 00	School
3	Grover.....	Taylor...	200 00	160 00	.....	100 00	School
1	Rib Lake.....	Taylor...	840 00	280 00	.....	560 00	Norm'l
4	Grover.....	Taylor...	280 00	65 00	.....	195 00	School
5	Chelsea.....	Taylor...	200 00	100 00	.....	100 00	School
2	Grover.....	Taylor...	.....	.....	700 00	700 00	School
2	Rib Lake.....	Taylor...	.....	.....	600 00	600 00	School
Jt. 1	Grover and Cleveland	Taylor...	.....	.....	700 00	700 00	School
Jt. 9	Hammel and Grover...	Taylor...	.....	.....	150 00	150 00	School
Jt. 2	Etrick and Gale.....	Trempl'u	400 00	100 00	.....	300 00	School
1	Trempealeau.....	Trempl'u	1,000 00	250 00	.....	750 00	School
2	Sumner.....	Trempl'u	222 24	55 56	.....	166 68	School
1	Albion.....	Trempl'u	200 00	100 00	.....	100 00	School
13	Trempealeau.....	Trempl'u	200 00	100 00	.....	100 00	School
1	Lincoln.....	Trempl'u	3,000 00	500 00	.....	2,500 00	School
1	Sumner.....	Trempl'u	770 00	110 00	.....	660 00	School
Jt. 8	Arcadia (Glencoe, Buf- falo Co.).....	Trempl'u	300 00	75 00	.....	225 00	School
6	Hale.....	Trempl'u	240 00	30 00	.....	210 00	School
4	Pigeon.....	Trempl'u	437 50	62 50	.....	375 00	School
5	Pigeon.....	Trempl'u	350 00	50 00	.....	300 00	School
Jt. 5	Etrick (Franklin, Jack- son Co.).....	Trempl'u	375 00	37 50	.....	337 50	School
Jt. 1	Hale, Pigeon and Lin- coln.....	Trempl'u	350 00	50 00	.....	300 00	School
Jt. 2	Unity and Albion.....	Trempl'u	.....	70 00	350 00	280 00	School
Jt. 13	Clinton and Webster..	Vernon..	100 00	100 00	.....	.....	School
Jt. 5	Liberty and Webster..	Vernon..	100 00	50 00	.....	50 00	School
7	Union.....	Vernon..	150 00	50 00	.....	100 00	School
4	Coon.....	Vernon..	50 00	50 00	.....	.....	School
Jt. 1	Jefferson and Viroqua.	Vernon..	600 00	100 00	.....	500 00	School
Jt. 8	Sterling, Harmony and Jefferson.....	Vernon..	65 00	65 00	.....	.....	School
Jt. 1	Jefferson and Viroqua.	Vernon..	280 00	40 00	.....	240 00	School
Jt. 9	Liberty (Forest, Rich- land Co.).....	Vernon..	2,345 00	335 00	.....	2,010 00	School
7	Christiana.....	Vernon..	1,440 00	180 00	.....	1,260 00	School
Jt. 9	Forest, Union, Whites- town and Stark.....	Vernon..	800 00	100 00	.....	700 00	School
7	Forest.....	Vernon..	200 00	100 00	.....	100 00	School
3	Jefferson.....	Vernon..	150 00	50 00	.....	100 00	School
Jt. 5	Viroqua and Jefferson.	Vernon..	400 00	100 00	.....	300 00	School
15	Stark.....	Vernon..	900 00	100 00	.....	800 00	School
Jt. 6	Jefferson and Coon....	Vernon..	320 00	80 00	.....	240 00	School
5	Bergen.....	Vernon..	400 00	200 00	.....	200 00	School
Jt. 6	Jefferson and Coon....	Vernon..	125 00	.....	.....	125 00	School
5	Hillsboro.....	Vernon..	500 00	.....	.....	500 00	School
	Eagle River School Di- rectors.....	Vilas...	1,500 00	1,500 00	.....	.....	School
	Eagle River School Di- rectors.....	Vilas...	3,200 00	1,600 00	.....	1,600 00	School
	Minoqua School Di- rectors.....	Vilas...	900 00	.....	.....	900 00	School
	Minoqua.....	Vilas...	1,000 00	.....	.....	1,000 00	School
3	Walworth.....	Walw'th	1,200 00	200 00	.....	1,000 00	School
	Veazie School Dir'ct'rs	Washb'n	200 00	100 00	.....	100 00	School
2	Shell Lake.....	Washb'n	2,400 00	600 00	.....	1,800 00	School
2	Bashaw.....	Washb'n	50 00	50 00	.....	.....	School
	Veazie School Dir'ct'rs	Washb'n	130 00	130 00	.....	.....	School
Jt. 1	Bashaw and Shell Lake	Washb'n	1,000 00	500 00	.....	500 00	School
	Veazie School Dir'ct'rs	Washb'n	300 00	100 00	.....	200 00	School
	Minong School Dir'ct'rs	Washb'n	.....	.....	500 00	500 00	School
	Veazie School Dir'ct'rs	Washb'n	.....	.....	1,000 00	1,000 00	School
1	Genesee.....	W'kesha	1,260 00	140 00	.....	1,120 00	School

Loans.

No.	Name of district.	County.	Out-standing Sept. 30, 1897.	Princi-pal paid in 1898.	New loans made in 1898.	Out-standing Sept 30, 1898.	Fund.
Jt. 4	Mattison (Navarino, Shawano Co.)	Waup'ca	\$50 00	\$50 00			School
4	Harrison	Waup'ca	150 00	50 00		\$100 00	School
2	Mattison	Waup'ca	400 00	100 00		300 00	School
Jt. 1	Farmington and Scan- dinavia	Waup'ca	500 00	100 00		400 00	School
1	City of Clintonville	Waup'ca	9,000 00	900 00		8,100 00	School
2	Little Wolf	Waup'ca	3,749 40	416 60		3,332 80	School
6	Matteson	Waup'ca	396 00	99 00		297 00	School
5	Matteson	Waup'ca	300 00			300 00	School
Jt. 1	Wautoma and Dakota.	W'shara.	1,600 00	250 00		750 00	School
Jt. 1	Plainfield et al. (See Portage Co.)	W'shara.					
Jt. 2	Rose and Springwater.	W'shara.	716 00	179 00		537 00	School
Jt. 1	Leon and Saxville	W'shara.	800 00	200 00		600 00	School
11	Hancock	W'shara.	225 00	75 00		150 00	
	Omro, First Loan	W'n'b'go	5,000 00	1,000 00		4,000 00	School
	Omro, Second Loan	W'n'b'go	2,000 00			2,000 00	School
4	Milladore	Wood	200 00	50 00		150 00	School
5	Milladore	Wood	50 00	50 00			School
3	Saratoga	Wood	50 00	50 00			School
4	Saratoga	Wood	50 00	50 00			School
4	Remington	Wood	100 00	100 00			School
5	Siegel	Wood	243 35	48 67		194 68	School
Jt. 1	Wood and Pittsville	Wood	200 00	100 00		100 00	School
1	Nekoosa Village	Wood	900 00	150 00		750 00	School
Jt. 6	Sherry (Carson, Por- tage Co.)	Wood	300 00	100 00		200 00	School
3	Auburndale	Wood	75 00	75 00			School
3	Rock	Wood	500 00	100 00		400 00	School
1	Marsfield City	Wood	4,000 00			4,000 00	School
Jt. 5	Milladore (Carson, Por- tage Co.)	Wood	380 00	95 00		285 00	School
4	Remington	Wood	500 00	100 00		400 00	School
Jt. 2	Auburndale (Day, Ma- rathon Co.)	Wood	400 00	100 00		300 00	School
5	Remington	Wood		40 00	\$400 00	360 00	School
6	Lincoln	Wood			250 00	250 00	School
6	Remington	Wood			485 00	485 00	School
Totals			\$395,507 37	\$75,369 61	\$82,461 00	\$461,236 80	

Trespass Penalties.

SUMMARY OF LOANS TO SCHOOL DISTRICTS.

Fund.	Outstand- ing Sept. 30, 1896.	Increased by new loans.	Decreased by pay- ments.	Outstand- ing Sept. 30, 1898.
School	\$389,285 51	\$197,739 25	\$134,555 54	\$452,469 22
Normal	6,221 86	8,000 00	5,454 28	8,767 58
Totals.....	\$395,507 37	\$205,739 25	\$140,009 82	\$461,236 80

The following tables show the amount of monies received and collected in the different counties and credited to the different funds from trespass on vacant and contracted State lands. All expenses incurred in looking up and a survey of such lands was collected of the trespassers and turned into the general fund. Monies received from sales of material and stumpage has been turned into the treasury and placed to the credit of the funds entitled thereto:

General Fund.

Counties.	Jan. 7, 1895 to Sept. 30, 1896.	Fiscal years 1896 and 1897.	Fiscal years 1897 and 1898.
Ashland.....		\$159 70	\$60 00
Chippewa		9 82	
Clark	\$7 00	7 67	
Forest	58 00	1,016 10	
Iron	2 19		
Lincoln	277 04		
Marathon			214 95
Marinette	36 83		
Oneida		10 00	
Price		16 68	
Sawyer	935 46		
Taylor	165 98	1,122 40	
Vernon	143 80		
Vilas	166 46		120 00
Washburn	1,372 68	541 84	10 00
Totals	\$3,165 44	\$2,884 21	\$404 95

Trespass Penalties.

General Fund.

Chapter 367, Laws of 1897.

Counties.	Fiscal years 1897 and 1898.
Vilas	\$271 00
Washburn	1,073 79
Totals	\$1,344 79

School Fund.

Counties.	Fiscal years 1896 and 1897.	Fiscal years 1897 and 1898.
Burnett		\$125 70
Chippewa	\$39 29	
Door	12 50	
Marathon		69 79
Totals	\$51 79	\$195 49

Indemnity Swamp Fund.

Counties.	Jan. 7, 1895 to Sept. 30, 1896.	Fiscal years 1896 and 1897.
Marinette	\$147 30	
Taylor		\$632 61
Totals	\$147 30	\$632 61

*Trespass Penalties.**Normal School Fund.*

Counties.	Jan. 7, 1895 to Sept. 30, 1896.	Fiscal years 1896 and 1897.	Fiscal years 1897 and 1898.
Ashland	\$50 00	\$404 22	.....
Burnett			\$194 00
Iron	100 00	590 72	.....
Oneida		50 00	.....
Price			50 00
Sawyer	1,415 45		.....
Taylor		97 92	.....
Vernon	25 00		.....
Vilas	38 77		.....
Washburn	298 60	2,760 00	85 70
Totals	\$1,927 82	\$3,902 86	\$329 70

Drainage Fund.

Counties.	Jan. 7, 1895 to Sept. 30, 1896.	Fiscal years 1896 and 1897.	Fiscal years 1897 and 1898.
Burnett			\$442 80
Clark	\$31 50		.....
Douglas	101 73		.....
Iron	50 00	\$1,043 97	.....
Sawyer	1,465 40		.....
Vernon	25 00	90 80	.....
Vilas	630 64		.....
Washburn	439 84	2,670 67	119 80
Totals	\$2,744 11	\$3,805 44	\$562 60

Summary of Trespass Moneys Collected.

Summary of Trespass Moneys Collected.

Fund.	Jan 7, 1895, to Sept. 30, 1896.	Fiscal years 1896 and 1897.	Fiscal years 1897 and 1898.	Totals.
General	\$3,165 44	\$2,884 21	\$404 95	\$6,454 60
Chap. 367, '97.			1,344 79	1,344 79
School		51 79	195 49	247 28
Normal	1,927 82	3,902 86	329 70	6,160 38
Drainage	2,744 11	3,805 44	562 60	7,112 15
Ind. Swamp..	147 30	632 61		779 91
Totals....				\$22,099 11

Drainage Moneys, 1897.

Statement of Drainage Moneys received for the Year ending September 30, 1897.

Counties.	Sales.	Dues.	Interest.	Refunded.	Total Amount due counties.
Adams	\$100 00				\$100 00
Ashland	50 00				50 00
Bayfield	50 00				50 00
Buffalo	54		\$3 43		3 97
Burnett	1,036 52				1,036 52
Chippewa	50 00				50 00
Clark	480 00				480 00
Crawford	524 05				524 05
Dane			40 53		40 53
Dodge	50 00				50 00
Douglas	1,424 53				1,424 53
Eau Claire	54 76		3 15		57 91
Florence	725 29				725 29
Forest	859 48				859 48
Green Lake	120 00		4 41		124 41
Iron	1,158 46			\$33 88	1,124 58
Jackson	401 30				401 30
Juneau	648 09				648 09
La Crosse	60 00				60 00
Langlade	154 69				154 69
Lincoln	2,070 00				2,070 00
Manitowoc			2 52		2 52
Marinette	438 81				438 81
Marquette		\$51 00	34 86		85 86
Monroe	60 00				60 00
Oconto	150 00				150 00
Oneida	2,421 51				2,421 51
Outagamie	459 21				459 21
Polk	20 33				20 33
Portage	558 09				558 09
Price	168 25				168 25
Sawyer	50 00				50 00
Shawano	120 00				120 00
Taylor	260 80			15 48	245 32
Vernon	29 34				29 34
Vilas	450 64				450 64
Washburn	3,062 67				3,062 67
Waupaca	80 00		3 15		83 15
Waushara	170 00		3 15		173 15
Winnebago			23 10		23 10
Wood	75 58				75 58
Totals	\$18,592 94	\$51 00	\$118 30	\$49 36	\$18,712 88

Drainage Moneys, 1898.

Statement of Drainage Moneys received for the year ending September 30, 1898.

Counties.	Sales.	Dues.	Interest.	Refunded.	Total amount due counties.
Adams.....	\$250 46				\$250 46
Ashland.....	286 50				286 50
Bayfield.....	287 51				287 51
Buffalo.....	30 00		\$3 43		33 43
Burnett.....	1,850 39				1,850 39
Chippewa.....	80 00				80 00
Crawford.....	30 43				30 43
Dane.....			40 53		40 53
Door.....	86 34				86 34
Douglas.....	257 61				257 61
Eau Claire.....		\$45 00	1 25		46 25
Florence.....	100 00				100 00
Forest.....	1,200 06				1,200 06
Green Lake.....		63 00	4 41		67 41
Iron.....	120 00				120 00
Jackson.....	20 00				20 00
Juneau.....	2,283 21				2,283 21
Langlade.....	446 27				446 27
Lincoln.....	422 85				422 85
Marquette.....		90 00	29 54	\$4 56	114 98
Manitowoc.....	48 15		2 52		50 67
Marinette.....	180 00				180 00
Monroe.....	123 49				123 49
Marathon.....	120 00				120 00
Oconto.....	888 91				888 91
Oneida.....	603 26				603 26
Polk.....	30 00				30 00
Portage.....	1,210 32				1,210 32
Price.....	200 00				200 00
Richland.....	58 50				58 50
Shawano.....	364 41				364 41
Taylor.....	419 69				419 69
Trempealeau.....	107 45				107 45
Vilas.....	210 70				210 70
Washburn.....	119 80				119 80
Waushara.....			3 15		3 15
Waupaca.....	179 04		3 15		182 19
Winnebago.....		40 00	20 77		60 77
Totals.....	\$12,615 35	\$238 00	\$108 75	\$4 56	\$12,957 54

Apportionment of Drainage Moneys.

Apportionment of Drainage Moneys in accordance with Chapter 340, Laws of 1889, Showing the amount due the Several Counties for the fiscal year ending September 30, 1897.

Counties.	No. of acres selected.	Amount due coun- ties, 1897.	Amount due coun- ties, 1898.
Adams.....	1,707.23	\$32 84	\$45 92
Ashland.....	181.24	3 58	4 87
Barron.....	160.00	3 08	4 30
Bayfield.....	67.70	1 30	1 82
Brown.....	720.00	13 84	19 37
Buffalo.....	3,105.26	58 74	83 53
Burnett.....	360.00	6 92	9 68
Calumet.....	177.57	3 42	4 78
Chippewa.....	1,424.76	27 40	38 32
Clark.....	1,280.00	24 82	34 43
Columbia.....	2,248.70	43 25	60 48
Crawford.....	1,620.54	30 17	43 59
Dane.....	1,796.66	35 47	53 17
Dodge.....	2,133.73	41 05	57 40
Door.....	1,133.73	21 80	30 50
Douglas.....	339.96	6 53	9 14
Dunn.....	6,145.66	117 23	164 32
Eau Claire.....	1,282.02	24 66	34 49
Fond du Lac.....	760.00	14 61	20 44
Grant.....	37.30	72	1 18
Green.....	360.00	6 92	9 68
Green Lake.....	453.75	8 72	12 21
Jackson.....	1,050.79	24 21	31 42
Jefferson.....	1,360.00	26 16	36 58
Juneau.....	1,247.33	24 00	33 53
Kenosha.....	80.00	1 53	2 65
Kewaunee.....	515.02	9 90	13 85
La Crosse.....	4,035.42	75 62	107 55
Lincoln.....	121.38	2 32	3 25
Manitowoc.....	1,825.91	35 92	48 82
Marathon.....	1,679.71	32 31	45 19
Marinette.....	1,583.37	30 46	42 59
Marquette.....	1,642.32	31 60	44 18
Monroe.....	1,950.89	37 52	52 48
Oconto.....	2,069.70	39 81	55 67
Outagamie.....	1,626.11	31 17	43 74
Pepin.....	1,775.20	34 15	47 75
Polk.....	360.18	6 92	9 69
Portage.....	1,067.60	20 53	28 72
Racine.....	40.00	77	1 33
Richland.....	1,261.29	24 26	33 93
Rock.....	756.22	14 34	20 34
Sauk.....	1,879.26	36 16	50 47
Shawano.....	1,242.10	23 90	33 41

Apportionment of Drainage Moneys.

Apportionment of Drainage Moneys, etc.—continued.

Counties.	No. of acres selected.	Amount due counties, 1897.	Amount due counties, 1898.
Sheboygan.....	359.99	\$6 91	\$9 68
Trempealeau.....	861.56	16 57	23 18
Vernon.....	1,534.22	29 52	41 27
Walworth.....	1,315.08	25 28	35 37
Washington.....	680.88	13 10	18 49
Waukesha.....	80.00	1 53	2 65
Waupaca.....	4,722.50	90 85	130 04
Waushara.....	1,490.70	28 67	30 27
Winnebago.....	809.33	15 56	21 68
Wood.....	1,730.83	33 30	46 54
Totals.....	70,250.84	\$1,351 92	\$1,889 93

Statement of Lands held by the State September 30, 1898.

Counties.	School lands.	University lands.	Agricultur'l college lands.	Normal School lands.	Drainage lands.	Marathon County lands.	Indemnity lands.	Total number acres.
Adams	800.00			456.03	433.57			1,689.60
Ashland	401.90			2,989.73	2,775.58			6,167.21
Barron				169.50	199.92			369.42
Bayfield	480.00			2,869.83	3,117.86			6,467.69
Buffalo	200.00			399.51	158.50			2,188.01
Burnett	6,732.49			10,616.12	14,187.86			31,536.47
Calumet					80.00			80.00
Chippewa	333.70			3,414.24	1,247.43		2,830.00	7,825.37
Clark	80.00	40.00		840.00	425.12			1,385.12
Columbia	57.20			47.39	68			105.27
Crawford	64.38			800.32	724.97			1,589.67
Dane					81.44			81.44
Dodge				92.60	47.96			140.56
Door	220.00			488.33	453.40			1,161.73
Douglas	1,640.00			4,916.73	3,892.51			10,449.24
Dunn	680.00			327.72	304.83			1,312.55
Eau Claire	640.00	369.42		82.35	371.02			1,462.79
Florence	40.00			2,565.65	2,452.57			5,058.22
Fond du Lac					40.00			40.00
Forest	1,882.05			23,058.36	22,385.20		1,972.33	49,297.94
Grant	120.00			216.62	248.44			585.06
Green Lake				41.87	40.00			81.87
Iron	2,022.00			16,386.30	16,543.82		167.65	35,119.77
Jackson	2,087.00			1,413.05	1,922.20			5,422.25
Jefferson					120.00			120.00
Juneau	785.50			265.59	296.78			1,347.87
Kenosha					40.00			40.00
La Crosse				163.48	79.78			243.26

Lands Held by the State.

Statement of Lands held by the State September 30, 1898.—Continued.

Counties.	School lands	University lands.	Agricultural College lands.	Normal school lands.	Drainage lands.	Marathon county lands.	Indemnity lands.	Total number acres.
Langlade.....	280.00			5,669.29	5,075.42			11,024.71
Lincoln.....	581.85			5,989.10	5,159.20		6,053.90	17,784.05
Manitowoc.....					40.00			40.00
Marathon.....	80.00			2,343.11	398.78	206.93		3,028.82
Marinette.....	920.00			1,811.71	1,827.06		10,238.03	14,796.80
Marquette.....				108.43	66.25			174.68
Monroe.....	680.00			325.75	533.37			1,539.12
Oconto.....	160.00			4,309.50	1,233.89		200.00	5,903.39
Oneida.....	1,441.97			14,300.29	17,798.54		480.00	34,020.80
Outagamie.....				30.42	2,758.71			2,789.13
Pepin.....	80.00	76.90		70.40	112.00			339.30
Pierce.....				37.17	65.00			102.17
Polk.....	1,160.00		40.00	943.59	1,169.98			3,313.57
Portage.....	40.00	162.32		1,030.89	2,128.30			3,361.51
Price.....	761.78			16,462.28	14,823.76			32,047.82
Richland.....				41.44	19.94			61.38
Sawyer.....	1,000.00			4,149.38	4,745.48		4,925.52	14,820.38
Shawano.....	31.28		89.57	1,569.58	806.26			2,496.69
Sheboygan.....				40.00				40.00
Taylor.....			40.00	2,802.54	3,546.57		2,442.67	8,831.78
Trempealeau.....				79.90	42.40			122.30
Vernon.....	80.00			451.35	439.95			971.30
Vilas.....	4,958.21			8,746.62	8,926.73			22,631.56
Washburn.....	2,183.50			5,956.37	6,150.12			14,289.99
Waupaca.....				81.35	355.84			437.19
Waushara.....	240.00			80.00				320.00
Wood.....	120.00			206.50	326.42			652.92
Totals.....	34,064.81	648.64	169.57	150,258.28	152,651.41	206.93	29,310.10	367,309.74

Lands Held by the State.

Lands Held by the State.

Under the Swamp Land Grant, approved September 28th, A. D. 1850, entitled, "An Act to enable the state of Arkansas and other states to reclaim the Swamp Lands within their limits," the state has received patents for 2,457 21-100 acres of land during the fiscal term ending September 30, 1896. These lands were selected under such grant, but had been previously disposed by the state. In order to perfect title to the purchasers of such lands they were patented by the United States to the state. Relinquishment of all claims having been first made to the United States by such purchasers.

The state has also received patents for 4,722 62-100 acres under the Swamp Land Grant above referred to. Conflicts had arisen between the United States and the state as to the claim thereto by the state as swamp lands. Such claims to certain tracts have been adjudicated in favor of the state and patents received therefor. Such lands are subject to sale on compliance with the statute in such case made and provided. The aggregate received being 7,129 83-100 acres.

Respectfully submitted,

HENRY CASSON, Secretary of State,

SEWELL A. PETERSON, State Treasurer,

W. H. MYLREA, Attorney General,

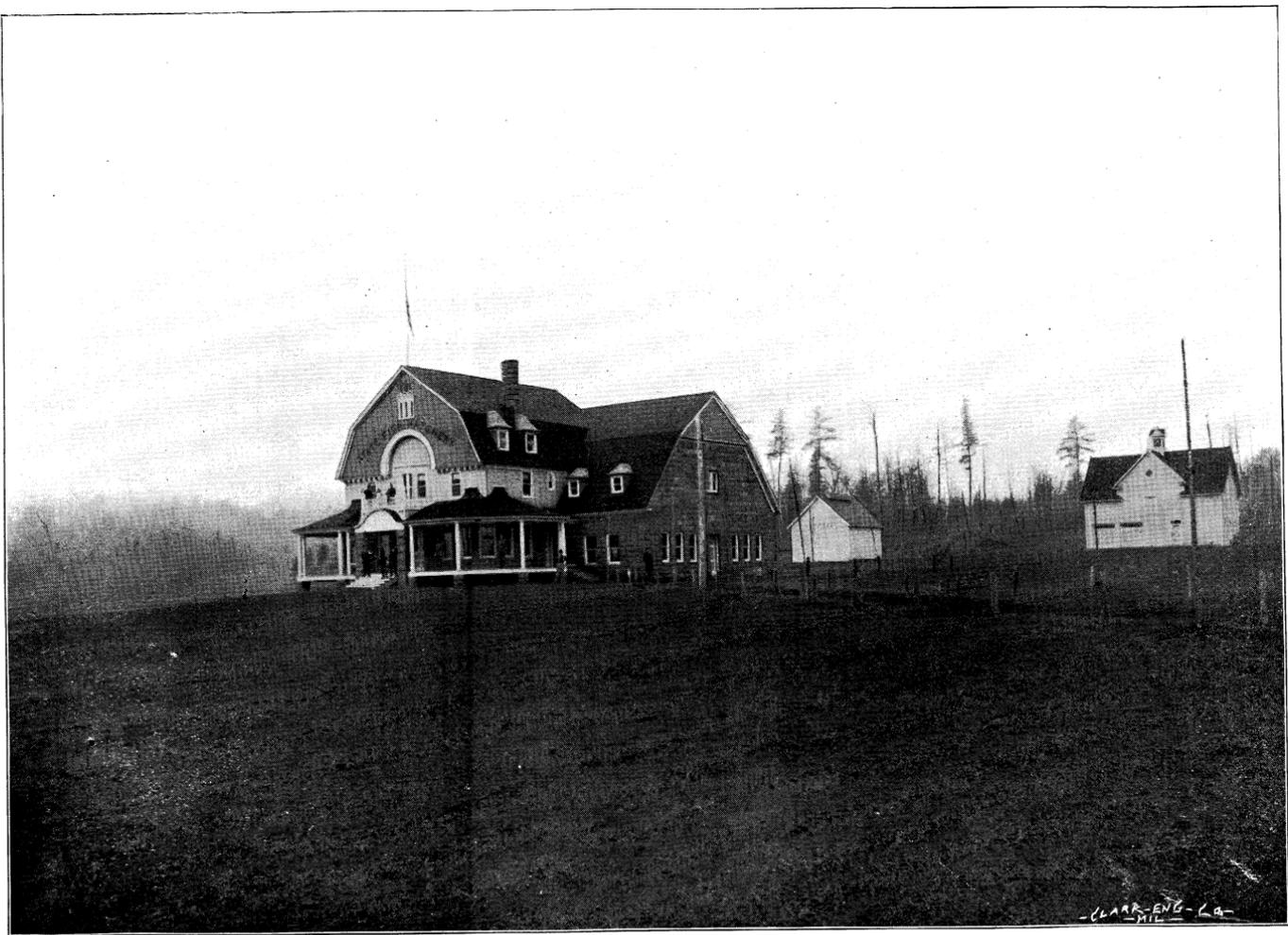
Commissioners of the Public Lands.

Official:

EGBERT WYMAN,

Chief Clerk of the Department of the Public Lands.





FISH HATCHERY AT BAYFIELD.

BIENNIAL REPORT

OF THE

COMMISSIONERS OF FISHERIES

AND THE

STATE FISH AND GAME WARDEN

OF

WISCONSIN.

1897-1898.



MADISON, WIS.:
DEMOCRAT PRINTING COMPANY, STATE PRINTER,
1899.

COMMISSIONERS.

<i>Name.</i>	<i>Residence.</i>	<i>Term expires.</i>
The Governor ex-officio.		
Edwin E. Bryant, President.....	Madison	April 1, 1899.
W. J. Starr.....	Eau Claire	April 1, 1905.
Calvert Spensley, Sec'y and Treas.....	Mineral Point	April 1, 1903.
James J. Hogan.....	La Crosse	April 1, 1901.
Henry D. Smith.....	Appleton	April 1, 1899.
Currie G. Bell.....	Bayfield	April 1, 1899.
James Nevins, Superintendent.....	Madison.	

STATE FISH AND GAME WARDEN.

James T. Ellarson.....Wautoma.....May 15, 1899.

REPORT OF THE

COMMISSIONERS OF FISHERIES.

To the Honorable, the Legislature of Wisconsin:

GENTLEMEN:—The commissioners of fisheries of the state of Wisconsin, in compliance with the law prescribing their duties, present herewith a report of their transactions for the two years ending December 31st, 1898.

A. GENERAL STATEMENT OF TRANSACTIONS.

The two years included in this report have been a period of great activity on the part both of the commissioners and those in their employ. During this time a large and admirably equipped hatchery has been erected at Bayfield, and the operations of the hatchery maintained for many years at Milwaukee have been suspended and transferred to Oshkosh. Much labor has, therefore, been necessary in addition to the ordinary work of the commission.

The work of taking, hatching and distributing spawn and young and adult fish now extends throughout the year, and no sooner is the handling of one variety of fish completed than it is necessary to begin work upon another. The labors, therefore, of the commission are unceasing and make great demands on their employes for unsparing and efficient service. The commissioners are glad to give hearty commendation to the faithful services of all their employes, and especially of the superintendent, Mr. James Nevin.

Report of Commissioners.

B. DISTRIBUTION OF FISH.

The following table shows the number and kinds of fish and fry distributed in the waters of the state during the two years covered by this report:

Names of Species.	1897.	1898.
Brook trout.....	1,949,000	1,902,500
Rainbow trout.....	1,191,000	1,155,000
Lake trout (fry).....	10,000,000	7,512,000
Lake trout (fingerlings).....	10,000	.....
Whitefish.....	18,000,000	3,000,000
Wall-eyed pike.....	23,300,000	53,980,000
Muskallonge.....	11,000,000	.....
Black bass.....	4,500	112,200
White bass.....	9,115	23,420
Totals.....	65,463,615	67,685,120

A detailed statement, showing the places where distribution was made, is appended to this report. Large as is this output the calls for fry and adult fish are continually increasing and the demands are far in excess of the number which the commissioners can possibly supply at present. Owing to the overcrowded condition of the Madison hatchery, the number of trout fry during the past two years has not been so great as in the past, but, with the increased accommodations afforded by the Bayfield hatchery, the number will rapidly increase.

C. STATEMENT OF APPROPRIATIONS AND EXPENDITURES.

Appropriation from January 1, 1897, to January 1, 1898.....	\$20,000 00
Special appropriation for Bayfield Hatchery, 1897.....	10,000 00
Appropriation from January 1, 1898, to January 1, 1899.....	20,000 00
The expenditures for the same period have been:	
For the year, January 1, 1897, to January 1, 1898.....	\$30,100 08
For the year, January 1, 1898, to January 1, 1899.....	19,776 00

The accompanying account of the treasurer of the commission sets forth more fully the object, nature and distribution of the expenditures. The commissioners have made every effort to economize their resources and to obtain the largest results and full value for money paid out, and they feel that as much as possible has been realized from the funds which the state has entrusted to their care.

Report of Commissioners.

D. BAYFIELD HATCHERY.

In the last biennial report an account was given of the lands acquired by the state at Bayfield and the improvements, both temporary and permanent, made there. The legislature of 1897 appropriated \$10,000 for the building of a fish hatchery at this place. During the year 1897 this hatchery was built and was completed in time for use during the winter of 1897-8, although the building was finished at so late a date that it could not be filled with eggs. The hatchery building is large, commodious and beautiful, as will be seen from the photograph reproduced herewith. The walls of the lower story are constructed of Lake Superior sandstone. The front of the building is two stories high, containing offices on the lower floor, and accommodation for the family of the superintendent in the second story. The hatchery room, in the rear, is 50x80 feet in size, and is, therefore, capable of containing an immense number of eggs.

The water for supplying the hatching troughs is brought from the dam at Birch Run, described in the last report. This water has proved to be in quality and quantity all that could be desired for the hatching of food fish. The temperature of the water, as it comes from the pond on Birch Run is so low that the hatching of the trout is delayed beyond what would be the case were the water taken directly from the springs. This delay in hatching permits the distribution of the trout in the spring of the year at a time when it is both easy to place them in the streams and when there is sufficient food supply in the streams for the young fry.

To conduct the water from the dam at Birch Run to the hatching house, a wooden pipe 16 inches in diameter and 2,000 feet long was constructed and laid. The pipe is made of 2x4 hemlock pieces, and is firmly bound at intervals of two feet with heavy iron bands. The excavations for this pipe were difficult, owing to the sandy nature of the soil and the depth of the trench, which at some points was twenty feet deep. The cost of the pipe

Report of Commissioners.

line for excavating and construction and laying of pipe was \$2,543.92.

The cost of the hatchery was \$9,005.59. During the year 1897, \$1,837.34 were expended on other permanent improvements at the Bayfield hatchery. During the year 1898 there were expended on permanent improvements at the Bayfield hatchery \$2,363.78, of which sum \$1,180.04 represent the cost of the barn and ice-house, the balance being expended for other permanent improvements.

An area of about twenty-five acres around the hatchery has been graded and cleared of the innumerable stumps and logs with which it was incumbered when the commissioners took possession of the property. A beginning has been made in the construction of permanent ponds for adult fish on the lower grounds, adjacent to the hatchery. In 1896, a long flume was built through the grounds and divided into ponds for the reception of trout. This temporary structure is still in use, but the commissioners expect to continue the construction of permanent ponds banked with stone, which will take the place of this race-way. The accompanying map of the grounds shows the number, size and arrangement of the ponds as planned. Three of the ponds are now made and others will be added during the coming year.

E. OSHKOSH HATCHING STATION.

The report of the superintendent for 1897 shows that out of nearly 200,000,000 eggs of wall-eyed pike, which were collected in the spring of that year, and placed in the Milwaukee hatchery, only a little more than 23,000,000 were hatched and distributed. This was the first time that pike eggs had ever died at the Milwaukee hatchery. The cause of the death was undoubtedly the low temperature of the water, caused by the extension into deeper water of the intake of the Milwaukee waterworks. This effect of the low temperature of the water on the eggs of the

Report of Commissioners.

wall-eyed pike made it impossible for the commissioners to continue longer their work at Milwaukee. Accordingly they determined to establish a temporary hatching station at Oshkosh. The park board of Oshkosh offered the commissioners a site free of charge in Lake Park, and a wooden building 30x60 feet was erected there during 1897, at a total expense of \$1,267.19. In this building were placed the wall-eyed pike eggs in the spring of 1898. Owing to low water in the Wolf river at the spawning season, the commissioners were unable to secure as many eggs as in the former year, collecting altogether 110,000,000, of which more than 50,000,000 were hatched and distributed. This proportion is a very favorable one and the Oshkosh hatching station is undoubtedly well adapted to the service which is expected of it. A considerable number of lake trout eggs will be transferred from the Bayfield hatchery to Oshkosh during the present winter, and, after hatching, distributed from Oshkosh. In this way the fry for the central and southern part of the state will be distributed more easily than from the Bayfield hatchery.

F. MADISON HATCHERY.

At the Madison hatchery ordinary repairs have been made sufficient to keep the property in good repair, including the replacement of sidewalks and the renewal of the bulkheads of the ponds. The supply of water at this hatchery has not increased during the past two years, though perhaps it has not diminished. In the years immediately preceding this report the supply of water declined rapidly and greatly. As a result of the continued diminution of water supply the ponds have become unable to maintain the breeding fish in the best condition, and their fatality has consequently diminished. The commissioners expect to transfer a considerable number of the fish to the Bayfield hatchery, where there will be sufficient room for their proper development, as soon as the ponds at Bayfield are constructed.

Report of Commissioners.

INLAND FISHERIES.

The inland fisheries are becoming more valuable each year. It is impossible to state their exact value or to approximate it with any degree of accuracy. Their value lies not only in the amount of food produced, but to a greater extent in the fact that they are a drawing attraction to the summer tourists, who come into this state to spend their summers and vacations in fishing and other recreations and lavishly spend their money while here. Excellent fishing in our lakes and streams also induces the summer resorters of Wisconsin to stay within the borders of our state in their search for recreation. The amount of money left within our borders on these accounts must extend into the millions of dollars annually. With an increasing number of wealthy people in the several large cities in and adjacent to our state, there is every reason to believe that this source of profit will increase in the future more rapidly than it has in the past. It is interesting to contemplate the vast amount of revenue the citizens of this state will derive from this source twenty-five years hence, if our lakes and streams are kept stocked with the better varieties of game fish, and the fish are given adequate protection by good laws rigidly enforced.

PHEASANTS.

In accordance with the statute of 1897, the commissioners have devoted much time and a small amount of money to the propagation of pheasants. It did not seem advisable to expend the full sum which they were authorized to expend by the act of the legislature, since the enterprise was a new one, and the commissioners were aware that there were many difficulties attending the propagation of these birds. The reports of the superintendent for 1897-8 will show what has been accomplished in this direction. The work has been more difficult than the

Report of Commissioners.

commissioners anticipated, and only a small degree of success has been reached up to this time. They trust, however, that the initial difficulties are now past and that a larger measure of success will attend their efforts in the future.

G. CO-OPERATION OF THE RAILWAYS.

The several railway companies of the state have rendered great assistance to the work of the commissioners by extending free transportation to the fish car and to the employes of the commissioners when engaged in the distribution of fish. The fish car, "Badger," traveled over the several railway lines in the state 18,725 miles in 1897, and 21,441 miles in 1898. If the commissioners had paid regular rates for this transportation, the necessary sum would have been a large portion of the amount appropriated for their use. The commissioners desire to make acknowledgment of the great service rendered them by the railroads of the state with so much promptness and courtesy.

Two of the railways of the state have especially co-operated with the work of the commissioners in the distribution of white bass. The C. & N. W. railway and the C., M. & St. P. railway each fitted up a baggage car with tanks suitable for the distribution of adult white bass, and during the spring of 1898 they co-operated with the commissioners: the commissioners catching and distributing the bass, and the companies furnishing these cars and their free transportation. Only a limited number of these adult fish can be carried in a car at one shipment, and the time during which they can be caught and shipped is short. By the simultaneous use of these two cars and the state fish car, "Badger," a much larger number of fish could be handled than when only one car was employed. More than 23,000 bass were transplanted in the state during the spring of 1898; a number much greater than has ever been distributed in one season before.

Report of Commissioners.

H. LEGISLATION AFFECTING THE WORK OF THE COMMISSIONERS
OF FISHERIES.

A bill was passed by the legislature of 1897, making a close time for fishing in the Great Lakes, and a similar bill, amendatory of this act has been prepared by a joint committee from the several states bordering the Great lakes, and is to be presented to this session of the legislature. Should this bill pass and should fishing be prohibited in the Great Lakes during the spawning season of the fall, the commissioners will be unable to procure the eggs of whitefish and lake trout from the fishermen as they have done heretofore. If fishing is prohibited during this season, the commissioners will be restricted for eggs to fish which are taken by the employes. The expense, however, of providing tugs and crews is so great that the commissioners will be unable to procure eggs in large numbers, and should they attempt to take the fish in large numbers, their action would necessarily result in the death of large numbers of fish during the spawning season. It may well be doubted whether the best method of preserving the fish of the Great Lakes is by establishing a close season, or by securing the taking of eggs from all fish caught during the spawning season, and providing a place where they may be hatched and from which they may be planted in the lakes from which they were taken. However this question of policy may be decided, it is right that the legislature should understand that the enforcement of the close season will render it necessary for the commissioners of fisheries to direct most of their work to the fish of the inland lakes, unless large appropriations are made to enable the commissioners to catch fish for spawning purposes from the Great Lakes.

The fisheries of the Great Lakes form an important industry, and are worth, at a low estimate, a million dollars per year to the state. They give employment to 1,500 people.

The beneficent results of stocking Lake Superior with white-

Report of Commissioners.

fish and lake trout from the Bayfield hatchery are already apparent in the increased catch of both species.

A second matter of proposed legislation, which may affect the work of the commission relates to free transportation on the railways of the state. Since the commissioners began their work, the various railways of the state have granted free transportation to the fish and to the fish car, and to the employes of the commission while engaged in the work of distributing fish. The commissioners would respectfully request that in any bill abolishing free transportation within the state, the fish car and the employes of the commission should be excepted. If, however, it seems wise to the legislature to require the commissioners to pay for this transportation, the commissioners would request an appropriation sufficient to defray this expense made. If the commissioners are required to pay transportation for the car out of the regular appropriation made for their use, their work will be very greatly reduced.

In conclusion, the commissioners would say that the sum of money now appropriated by law is sufficient to carry on the work of propagation of fish at the hatcheries already established; to make the ordinary repairs, and to improve, by degrees, the hatcheries, especially at Bayfield and Oshkosh. If, however, it should seem wise to the legislature to enact laws which will seriously increase the expenses of conducting the operations of the commissions, it is obvious that their work must be restricted, unless the necessary additional funds are appropriated by the legislature. Respectfully submitted,

EDWIN E. BRYANT,
E. A. BIRGE,
CALVERT SPENSLEY,
JAS. J. HOGAN,
WILLIAM J. STARR,
CURRIE G. BELL,
HENRY D. SMITH.

Commissioners of Fisheries.

Report of Treasurer.

TREASURER'S REPORT.

STATEMENT FOR 1897.

1897.	Dr.		
Jan. 1.	To balance on hand.....	\$26 08	
	Annual appropriation	20,000 00	
	Special appropriation	10,000 00	
	W. W. Warner, acct. whitefish sold.....	44 00	
	J. D. Latier for boat.....	30 00	
			\$30,100 08
	Cr.		
Dec. 31.	By salary, Jas. Nevin, Supt., 12 mos.....	\$1,883 30	
	Salary, Arthur Sykes, clerk, 12 mos.....	770 00	
			\$2,653 30
	MADISON HATCHERY.		
	Salary, Valentine Maag, foreman, 12 mos.....	\$770 00	
	Salary, Chris. Hutchinson, 12 mos.....	650 00	
	Salary, Jas. Foy, 5½ mos.....	272 50	
	Salary Frank Suthers, 5 mos.....	250 00	
	Salary, Jas. Brisse, 3 mos.....	180 00	
	Disbursements for sundry employmen.....	12 50	
	Disbursements for fish food.....	983 50	
	Disbursements, distributing fish.....	259 09	
	Disbursements, propagation of pheasants.....	112 96	
	Disbursements for permanent improvements.....	124 84	
	Disbursements, postage, printing and stationery.....	74 78	
	Telephone rent	48 00	
	Disbursements for supplies for barn.....	125 02	
	Disbursements for general supplies.....	393 38	
	Miscellaneous expenditures	176 82	
			4,433 39
	MILWAUKEE HATCHERY.		
	Salary, John Maag, officer in charge, 7 mos.....	\$511 50	
	Disbursements, collecting whitefish spawn.....	704 52	
	Disbursements, gathering pike spawn.....	350 40	
	Disbursements, distributing fish.....	148 51	
	Rent of hatching room.....	300 00	
	Rent of water.....	300 00	
	Disbursements for supplies.....	82 59	
			2,397 52
	BAYFIELD HATCHERY.		
	Salary, Henry Sykes, foreman, 12 mos.....	\$800 00	
	Salary, A. M. Anderson, 7 mos.....	360 00	
	Salary, Jas. Foy, 3½ mos.....	157 50	
	Salary, Bernard Holtman, 6 mos.....	120 00	
	Disbursements, for sundry employment.....	1,184 82	
	Disbursements for fish food.....	184 20	
	Disbursements, gathering pike spawn.....	113 00	
	Disbursements, distributing fish.....	196 07	
	Disbursements, collecting wild trout.....	724 24	
	Disbursements, collecting lake trout eggs.....	800 64	
	Disbursements, building hatching house.....	9,005 59	
	Disbursements for supplies for barn.....	199 96	
	Disbursements for other permanent improve- ments	4,669 26	
	Disbursements for general supplies.....	367 62	
	Miscellaneous expenditures	302 56	
			\$19,785 46

Report of Treasurer.

Dec. 31.	Disbursements, distributing black bass.....	91 60
	Disbursements, hatching muskallonge.....	310 56
	Disbursements, distributing white bass.....	359 37
	Disbursements, planting lake trout eggs, 1896..	50 00
	Disbursements, rep. & maintaining fish car....	428 55
	Disbursements, for premiums on insurance of buildings and fish car.....	204 75
	Expenses, James Nevin, superintendent, 12 mos.	432 72
	Commissioners' expenses, 12 mos.....	112 72
	Expenses over appropriations for year.....	\$31,259 94
		1,159 86
		\$30,100 08

STATEMENT FOR 1898.

1898.	Dr.		
Jan. 1.	To annual appropriation.....		\$20,000 00
	Cr.		
Jan. 3.	By amount paid on December bills, 1897.....		\$1,159 86
Dec. 31.	By salary, James Nevin, superintendent, 12 mos..	\$2,000 00	
	Salary, Arthur Sykes, clerk, 12 mos.....	840 00	
			\$2,840 00
MADISON HATCHERY.			
	Salary, Valentine Maag, foreman, 12 mos.....	\$840 00	
	Salary, Jas. Foy, 12 mos.....	600 00	
	Salary, Oscar Hutchinson, 8 mos.....	280 00	
	Disbursements for sundry employment.....	75 95	
	Disbursements for fish food.....	965 53	
	Disbursements, distributing fish.....	254 96	
	Disbursements, propagation of pheasants.....	138 62	
	Disbursements for permanent improvements..	118 83	
	Disbursements for supplies for barn.....	141 26	
	Disbursements for general supplies.....	327 08	
	Miscellaneous expenditures	125 75	
			\$3,867 98
BAYFIELD HATCHERY.			
	Salary, Henry Sykes, foreman, 12 mos.....	\$960 00	
	Salary, Ervine Mollne, 12 mos.....	529 00	
	Salary, Frank Suthers, 6 mos.....	360 00	
	Salary, Bernard Holtman, 9 mos.....	270 00	
	Salary, A. M. Anderson, 2 mos.....	120 00	
	Salary, Gunner Ashland, 5 mos.....	175 00	
	Salary, P. H. Johnson, 4 mos.....	140 00	
	Disbursements for sundry employment.....	320 46	
	Disbursements for fish food.....	361 22	
	Disbursements, distributing fish.....	315 99	
	Disbursements, collecting pike spawn.....	211 54	
	Disbursements, collecting lake trout ova.....	601 65	
	Disbursements, collecting whitefish spawn..	108 19	
	Disbursements, building barn and ice-house...	1,180 04	
	Disbursements for other permanent improve- ments	1,183 74	
	Telephone rent	49 00	
	Disbursements for supplies for barn.....	224 67	
	Disbursements for general supplies.....	294 60	
	Miscellaneous expenditures	110 22	
			7,515 32

Report of Superintendent.

OSHKOSH STATION.			
Dec. 31.	Salary, J. Maag, officer in charge, 5 mos.....	\$345 00	.....
	Disbursements, building hatching house.....	1,267 19	.....
	Disbursements, collecting pike spawn.....	329 90	.....
	Disbursements, distributing pike fry.....	74 80	.....
	Rent of water	139 98	.....
	Disbursements for supplies.....	47 06	.....
	Miscellaneous expenditures	57 76	.....
			\$2,261 69
	Water rent, Milwaukee, 3 mos		75 00
	Disbursements, distributing white bass.....		907 30
	Disbursements, distributing black bass.....		706 63
	Disbursements, rep. & maintaining fish car.....		108 97
	Disbursements for premiums on insurance of buildings and fish car.....		74 15
	Expenses, Jas. Nevin, superintendent, 12 mos...		368 27
	Commissioners' expenses, 12 mos.....		90 83
			\$19,976 00
	By balance on hand Dec. 31st.....		24 00
			\$20,000 00

SUPERINTENDENT'S REPORT—1897.

To the Commissioners of Fisheries:

GENTLEMEN:—I give here following my annual report of the operations at the several hatcheries, of work performed in the different branches of fish culture, and the propagation of pheasants, under my supervision during the year 1897:

THE DISTRIBUTION.

The following table shows the number of the different kinds of fish distributed during the year:

Brook trout	1,949,000
Rainbow trout	1,191,000
Whitefish	18,000,000
Lake trout fry	10,000 000
Lake trout, yearlings	10,000
Wall-eyed pike	23,300,000
White bass (full grown)	9,115
Black bass	4,500
Muskallonge	1,100,000
Total distribution	55,563,615

Report of Superintendent.

MADISON HATCHERY.

We distributed from the Madison hatchery last spring 1,949,000 brook trout and 1,191,000 rainbow trout fry. The fry was unusually strong and healthy, which is accounted for by the fact that the eggs were hatched in much colder water than formerly when the water was taken direct from the springs into the hatching house. The loss of fry in the hatchery was so slight that it is hardly worth mentioning.

During the spawning season just past, two million brook and brown trout ova were taken at this hatchery. These eggs are in first-class shape and have done well throughout the season. In 1896 the number of eggs taken was one million greater than this year. For the past three years there has been a decrease each year in the number of brook trout eggs taken at the Madison hatchery, as compared with each previous year. I am unable to fully account for this. I notice, however, that we obtain a smaller average of eggs from each fish than in previous years. During the past five years, the average number of eggs per female fish each year was as follows: 1893, 538; 1894, 568; 1895, 675; 1896, 344; 1897, 202. I also observe that when we come to take stock each year in December and January we find a large loss in our breeding fish, for which we cannot account. We endeavor to keep a record of all fish which die from various causes each year, and of the number of fish that we place in each pond; and when we come to count the fish the following year we note the loss, for which we cannot account.

The number of trout in the ponds at this hatchery is as follows:

Brook trout, various ages over one year old.....	21,680
Brook trout, last year's hatch (estimated)	40,000
Rainbow trout, various ages over one year old.....	17,770
Rainbow trout, last year's hatch (estimated).....	20,000
Brown trout, various ages over one year old.....	1,581
Brown trout, last year's hatch (estimated).....	5,000
Total trout on hand, Madison hatchery.....	106,031

Report of Superintendent.

An average of about 4,000 dead fish are taken from the ponds each year.

We are carrying over the largest number of young fish, last year's hatch, that we have ever carried over in one year, excepting 1891.

We have instituted a new system of keeping account of the fish in the ponds. We open an account with each pond, and keep a record of the number of fish put in and the number taken out. An account of the number of dead fish taken from each pond is also kept. In this way we will be able to tell accurately the loss of fish of all ages, and note in which ponds and at what ages the loss is the greatest.

BAYFIELD HATCHERY.

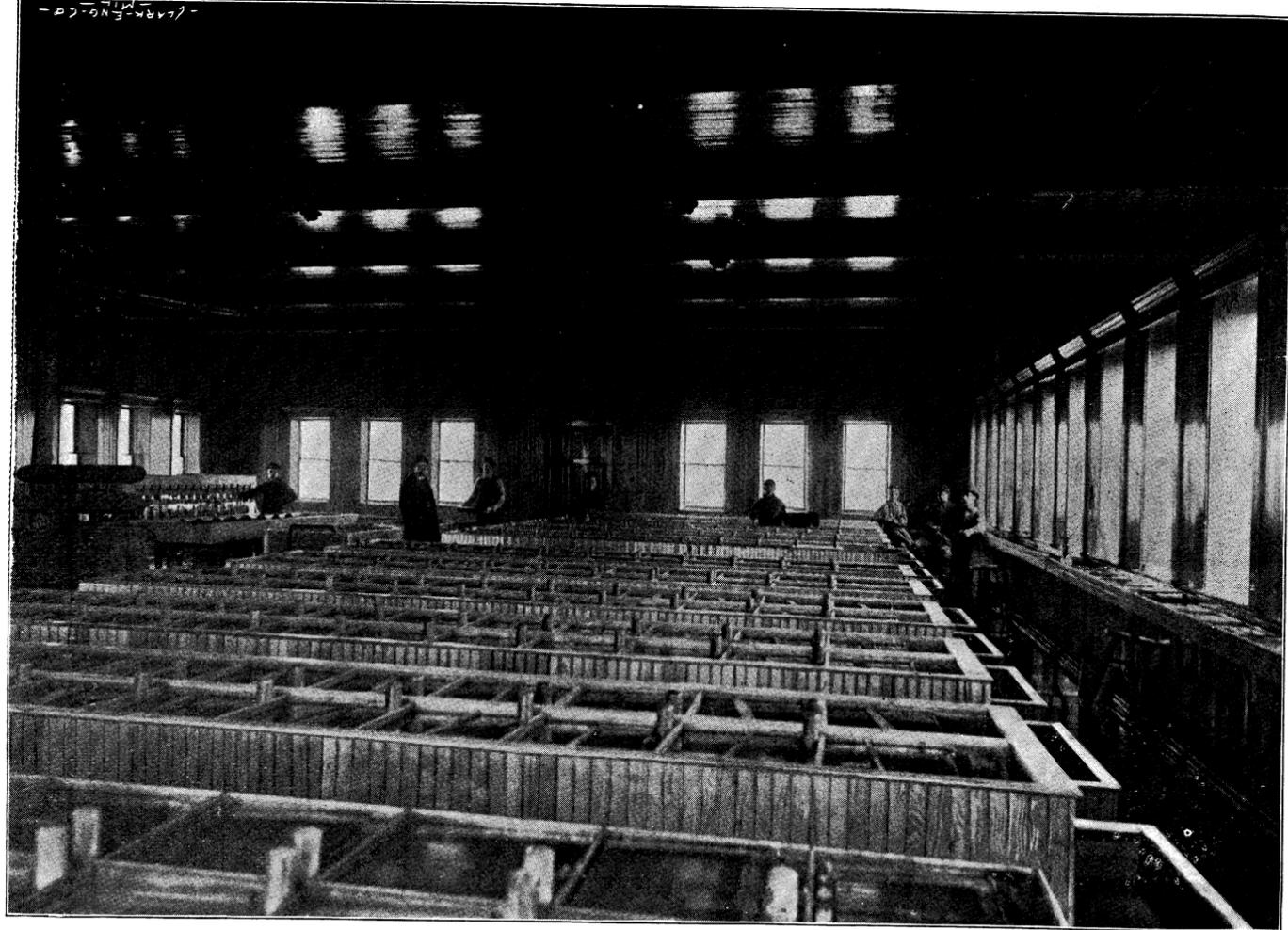
I stated in my last annual report that we had laid down 15,000,000 lake trout eggs in the Bayfield hatchery. These eggs did remarkably well and ten million fry were hatched and planted. I am gratified to be able to state that this large number of fish was, with two exceptions, planted in excellent condition.

We have at this hatchery, as the product of the fall and winter spawning season, 9,425,000 lake trout eggs, 508,000 brook trout eggs and 3,000,000 whitefish eggs. These eggs are all in prime condition.

In the ponds at this plant we have:

Brook trout, various ages over one year old.....	17,024
Brook and rainbow trout, hatch of '96.....	22,000
Rainbow trout, two years old, taken from Madison hatchery.....	3,000
Total number of trout on hand, Bayfield.....	42,024

As you have visited the Bayfield hatchery several times during the summer and fall, you are familiar with the many improvements which have been made there. The large permanent hatching house has been finished, and the barn and ice-house are about completed. The barn will cost about \$500. It is neat and attractive and harmonizes nicely in appearance with the other buildings. The ice-house is 40x25 feet. It will have a refriger-



INTERIOR OF BAYFIELD HATCHERY.



Report of Superintendent.

ating chamber for keeping frozen fish, which will be used as food for the fish in the ponds.

The freezing of herring for fish food has been very satisfactory and successful so far. They are natural food for fish; and I do not doubt but our trout will continue to do well on them. We are able to grind them in our feed cutting machines without any waste.

MILWAUKEE HATCHERY.

One hundred and ninety million wall-eyed pike ova were collected last spring during the spawning season. The egg of the pike are the most delicate with which we have to deal. It is seldom that the fish culturist succeeds in impregnating more than fifty per cent of the eggs he takes. We were very successful this year in securing the male fish with which to fertilize the eggs, and with our improved methods of hatching we should have had 100,000,000 fry to distribute. The eggs cleaned up in the very best form, and in due time the eye of the fish could be distinguished. At this stage they began to die in the jars, and thence forward continued to die off in such large numbers that we distributed only 23,300,000 pike fry. In my last report to you I recommended that a cheap building be put up at Oshkosh for the purpose of hatching pike eggs, as the waters at this point are naturally adapted to pike. I am well satisfied now that if we had built such a hatchery last spring we would have had over one hundred million wall-eyed pike fry to distribute. This is the first year and the first instance that we have ever had any pike eggs die in the hatching jars in the Milwaukee hatchery after the eye of the fish was discernable. In previous years the loss in eggs in all cases occurred before the egg had reached that stage in which you could notice the eye of the fish in the eggs. Such losses, I have always held, were due to the scarcity of male fish; or because the milt of the males, which were usually small, was not sufficiently virile to produce strong, healthy impregnation. This year we had an abundance of excellent male fish, and

Report of Superintendent.

the result, so far as fertilizing the eggs was concerned, was very satisfactory. Experiments made at the time the eggs were taken fully demonstrated this. In these experiments we held the eggs in the river from which the parent fish were taken for five days and had no loss in the eggs.

The loss of pike in the egg stage in Milwaukee I attribute to the low temperature of the water used in the hatchery during the time of incubation. Some two years since the Milwaukee water works began to take their supply of water from the new intake, and the temperature of the water which we now get for hatching is so low that the fish will not mature, but die in the egg. At no time while the eggs were in the jars did the temperature of the water in the hatchery go above 48 degrees F., which is the usual temperature of spring water in our state.

Twelve years ago I attempted to hatch pike eggs at the Madison hatchery in water which was drawn from one of the ponds at a temperature of 50, but the fish began to die in the egg, as they did at the Milwaukee hatchery last spring. At that time I fixed up a temporary place below the mill dam in Fourth lake, and transferred the eggs to this improvised hatchery, where I hatched them and thus saved the year's hatch.

On account of the close season in the state of Michigan, we did not collect any whitefish eggs on the west and north shores of Green Bay, where we have never failed to get a limited number heretofore.

December 7th, I went with a crew of four men to Long lake, Washburn county, to get inland-like whitefish eggs for the Milwaukee hatchery. We had twenty-seven gill nets and one pound net. In eighteen days fishing we caught only 560 fish, about 100 of which were females. The result of it all is we have no whitefish eggs in the hatchery this winter.

We have some 300,000 lake trout eggs in this hatchery which we collected at Waukegan, Ill. We did not attempt to collect lake trout eggs in Lake Michigan waters within the borders of Wisconsin, owing to the close season provided in our laws.

Report of Superintendent.

I have for several years recommended the abandonment of the Milwaukee hatchery, as we have never been able to get a sufficient number of whitefish eggs to warrant its maintenance. I would again make that recommendation at this time, as the limited number of whitefish eggs we are able to collect can be easily handled at the Bayfield hatchery.

WHITE BASS.

During the month of May we distributed 9,000 full grown white bass. These were, for the most part, planted in summer resort lakes convenient of access from railroads. We could have increased the total output considerably, but we had other work of distribution to attend to, and it was thought advisable to cut down expenses, so we discontinued the work.

BLACK BASS.

At the meeting of the board, September 10, you instructed me to make as large a distribution of black bass as possible from the sloughs along the Mississippi river; and accordingly men were detailed in the work of collecting this species. However, owing to the lateness of the season, and the prevalent high water, in part due to the heavy rains about that time, a large distribution was rendered impossible, as the fish could not be secured. Four thousand five hundred black bass were planted.

In accordance with your instructions, Mr. Frank W. Cheney, who has had extensive experience in the work of hatching muskallonge while in the employ of the New York fish commission, and is an expert in this branch of fish culture, was placed in charge of the work of collecting and hatching muskallonge ova. Lost lake, in Sawyer county, was selected as the best waters for this work. Mr. Cheney reports that 152 muskallonge were taken. Of this number twenty-nine were productive females, from which he took 2,040,000 eggs. The percentage of eggs hatched varied in different instances from 60 to 90 per cent. One million one hundred thousand fry were planted, as follows:

Report of Superintendent.

In Lost lake, Sawyer county, 200,000; in Lake DeNeavu, Fond du Lac county, 200,000; in Green lake, Green Lake county, 700,000. It was thought advisable to plant the fry in these waters in large numbers, in order that a thorough test might be given them to ascertain whether muskallonge could be introduced into those waters by planting fry.

FISH CAR.

Four hundred and twenty-seven dollars were paid out for repairs on the fish car, which was painted, varnished and furnished with new wheels throughout. The trucks were also overhauled and put in first-class condition. Barring accidents, it will not be necessary to make any additional expenditures for the car the ensuing year. Eighteen thousand seven hundred and twenty-five miles were traveled by the "Badger," 12,134 miles less than last year. The difference in mileage in the two years is due to the large distribution of black bass made in 1896. Eight hundred and thirty-six meals were served at a cost of 14 cents each.

PROPAGATION OF PHEASANTS.

Pursuant to your instructions, sixteen dozen Chinese and English pheasant eggs were purchased of Mr. H. F. Bosworth, a breeder of pheasants at Hartford, Wis., at a cost of \$2.40 per dozen. The eggs were placed under domestic hens by Mr. Maag, who had charge of the work.

One hundred and thirty-seven chicks were hatched, which thrived and apparently did very well until three weeks old. At this age they began to die. An examination showed that they were infested with lice, contracted from the hens which hatched them. From this and various other causes they continued to die until the time of planting them arrived, when there were but seventeen birds left. Two of these were liberated on the grounds of the Madison hatchery, and the remaining fifteen birds were taken to Bayfield and released on the hatchery grounds at that point. The cost of this work was \$113, the greater part of which

Report of Superintendent.

was expended for coops and pens, which we have on hand for use this year. With the experience gained through last year's work we hope to have better luck with the pheasants this year.

Our expenditures of money during the past year have exceeded the appropriations for that period by \$1,159.86, which will leave us just that amount short for this year's work.

Last June I made an estimate of the cost of the work that we had laid out, and it was apparent to me at that time that we would be short of funds. I cut the wages of our regular men, including myself, to the amount of \$571 for seven months ending December 31st, hoping that we would be able to make both ends meet, but the cut was not sufficient.

THE PROPOSED HATCHING STATION AT OSHKOSH.

Last spring when I reported the loss of wall-eyed pike at the Milwaukee hatchery on account of the low temperature of water, I stated that it was useless to make any further effort to hatch pike at Milwaukee. A resolution was passed by your board instructing me to correspond with the officials at Oshkosh to see what could be done in the way of getting a site for a hatching station at that point, and to ascertain the cost of the necessary water for hatching purposes. I went to Oshkosh, met with the park board, and found that they were willing to give us the desired site in Lake park. I also entered into correspondence with the manager of the water works company. The water works do not belong to the city, but to a private company. I will lay before you the correspondence I have had with the city officials and the water works company.

During the ten or twelve years that we have collected pike eggs on the Wolf river we have never failed to collect from 150,000,000 to 200,000,000 eggs annually. In my opinion, there is no question but the water in Lake Winnebago is perfectly adapted to the hatching of pike eggs; and I believe I can safely assure you that the output of pike fry will not be less than 100,000,00 per year if you transfer the Milwaukee plant to Oshkosh.

Report of Superintendent.

If you see fit to use the station at Oshkosh for hatching lake trout or whitefish, they can be hatched as well at Oshkosh as at Milwaukee. You will also be able to hatch several millions white bass fry each year, and if you desire at any time in the future to propagate black bass in ponds, the park board has signified its willingness to give us the use of the necessary grounds and to permit us to build ponds for that purpose. In this connection, I would say that those seasons that we have taken white bass from the mouth of the river at Oshkosh we have always found from twenty to seventy-five large black bass (small-mouthed species), full of spawn, in our nets each morning, affording an excellent opportunity to get breeding fish at little expense. These fish were coming on to the gravel beds to spawn.

JAS. NEVIN, Superintendent.

Madison, Wis., January 2d, 1898.

SUPERINTENDENT'S REPORT—1898.

To the Commissioners of Fisheries:

GENTLEMEN:—It is with considerable pleasure and satisfaction that I submit to you my report of the work done under your direction, and the distribution of fish from the several hatcheries during the year 1898.

The species of fish and the number of each distributed from each hatchery was as follows:

MADISON HATCHERY.

Brook trout	1,574,000	
Rainbow trout	1,155,000	
Lake trout	150,000	
		2,879,000

BAYFIELD HATCHERY.

Brook trout	328,500	
Lake trout	7,362,000	
Wall-eyed pike	11,380,000	
Whitefish	3,000,000	
		22,070,500

Report of Superintendent.

OSHKOSH STATION.

Wall-eyed pike	42,600,000
Full-grown white bass from Wolf river and Lake Win- nebago	23,420
Black bass	112,200
Total distribution, 1898	<u>67,635,120</u>

MADISON HATCHERY.

From the Madison hatchery we have distributed, as is shown in the above table, 1,574,000 of the brook and brown trout varieties, and 1,155,000 rainbow trout, also 150,000 lake trout.

The greater part of the rainbow trout were planted in the large streams or their tributaries in the north half of the state. Reports received from parties who planted the fish show that with hardly an exception both the brook and brown trout were planted in excellent condition. The loss of fry in the hatching troughs was small; at the same time the fry were not as strong and healthy as the fry planted last year from this hatchery. The fry placed in the rearing ponds have not done as well as last year.

The annual count of fish in the ponds at this hatchery shows the number of fish on hand to be:

Brook trout, one year old, hatch of '98, (estimated).....	15,000
Rainbow trout, one year old, hatch of '98, (estimated).....	10,000
Brook trout, two years old, hatch of '97.....	31,872
Rainbow trout, two years old, ('97).....	8,972
Brown trout, two years old, (estimated).....	4,500
Brook trout, various ages, three years old and over.....	22,518
Rainbow trout, three years old and over	15,589
Brown trout, three years old and over.....	<u>1,199</u>
Whole number of fish in ponds.....	109,650

A recount of the fish in some of the ponds has been made this fall, and we find there is an enormous loss in most of the ponds recounted. This loss is, for the most part, due to cannibalism, notwithstanding the care we have taken in sizing the fish, putting those of about the same size in the same ponds. Minks, turtles, snakes and fish hawks also destroy a large number of fish. We take all reasonable precautions to prevent these and

Report of Superintendent.

other losses which might occur, and I do not know of any way in which we could increase our vigilance in this matter. The following tables show in detail the losses in the ponds which have been recounted.

Divisions One and Two of Raceway No. 2.

These ponds contained brook and rainbow trout, hatch of "97," and were combined in counting.

No. of trout placed in the ponds		22,000
No. of dead fish removed during year.....	2,258	.....
No. of live fish taken out.....	13,847	.....
Loss, unaccounted for	6,795	.....
		<u>22,900</u>
Per cent. of unaccounted loss .....		.29

1,723 of the dead fish removed as per above table died during epidemic in those ponds during the month of March.

"Ponds Nos. 12 and 13."

These ponds contained brook trout three years old, and were counted together.

No. of trout placed in the ponds.....		19,618
No. of live fish taken from the ponds.....	12,923	.....
No. of dead fish removed from ponds during year.....	1,164	.....
Loss, unaccounted for	5,081	.....
		<u>19,618</u>
Per cent. of unaccounted loss.....		.26

During the month of May, two usually heavy rain storms occurred which, for the first time in the history of the establishment, overflowed the four ponds covered by the above tables. Although few indications were found that fish had escaped in this way, there can be no doubt that there was some loss on this account.

"Third Division of Raceway No. 2."

Rainbow trout, three years old.

No. of fish placed in the pond		3,050
No. of live fish taken out	2,964	.....
No. of dead fish removed during year.....	86	.....
		<u>3,050</u>

No unaccounted loss.

Report of Superintendent.

Pond No. 6.

This pond contained brook trout two years old (hatch of " '97").

No. of fish placed in the pond.....		2,729
No. of live fish taken out.....	2,529	.....
No. of dead fish removed during year.....	48	.....
Loss, unaccounted for	152	.....
		<u>2,789</u>
Per cent. of loss unaccounted.....		.05½

Ponds Nos. 7 and 8.

These ponds contained brook and brown trout three years old and over, and were combined in counting.

No. of fish placed in the ponds.....		5,379
No. of live fish removed in recounting	2,758	.....
No. of dead fish taken out during year.....	1,079	.....
Loss, unaccounted for	1,542	.....
		<u>5,397</u>
Per cent. of unaccounted loss.....		.28

A careful account of the dead fish taken from the ponds has been kept. In all 6,883 dead fish have been taken from the ponds during the year.

A considerable loss occurred among the " '97" hatch of brook trout at this hatchery during the month of April. This was at the time the snow was melting, but whether the snow had anything to do with it or not, I am unable to say. We have never before had a loss of this kind at that season of the year. One thousand, seven hundred and twenty fish died during the two weeks that the epidemic prevailed. We also had quite a loss of one-year old brook trout at the Bayfield hatchery. The cause of this loss was evidently the same as the cause of the loss at the Madison hatchery. It occurred at the time the snow water was coming down Birch Run freely. On account of the water keeping roily so long, an accurate account of the loss at Bayfield could not be kept. The loss will not be known until the fish in the ponds are counted again, and then only approximately.

Although the fry retained at the Madison hatchery has done

Report of the Superintendent.

well throughout the year, we will not have as many brook trout yearlings next spring as we had last.

During the spawning season just closed, 2,144,500 brook and brown trout eggs were taken. The number of unfertile eggs removed from the hatching trays has been very small up to date, and present conditions indicate a large percentage of hatch.

The average number of eggs taken from each female of the different ages was as follows:

Brook trout, hatch of "'97".....	339.
Brook trout, three years old.....	327.
Brook trout, four years old and over.....	815.

The general average of eggs taken from all ages was 378 per each female fish from which spawn was taken.

We found a large number of unproductive females in our stock of brook trout breeders at the Madison hatchery this fall. Of the whole number of brook trout females, four years old and over, 24 per cent. were barren; and of those three years old, 45 per cent. were barren. On this account we have not as large a number of brook trout eggs as we expected. I am unable to account for this unproductiveness. Correspondence with several other hatcheries does not reveal similar conditions elsewhere.

In handling our stock of fish from year to year, it is noticeable during the past few years that they do not attain to the size they formerly did, and they grow very slowly.

During the past two years many necessary repairs and improvements have been made at the Madison hatchery. The buildings have been repainted, sidewalks and ponds repaired, etc. Further repairs to the ponds and bulkheads will be necessary during the year.

PROPAGATION OF PHEASANTS.

I regret having to report another unsuccessful year in rearing Chinese and English pheasants, owing to several unfortunate circumstances, chief among which was the unfertility of the eggs. We purchased three hundred eggs, of which number one

Report of the Superintendent.

hundred thirty-eight birds were hatched, a part of which were dead when removed from the nests. An examination of the eggs which did not hatch showed that they had not been fertilized, or if fertilized had been improperly handled before being placed under the hens. From time to time dead birds were found in the coops, and in most cases no cause could be assigned for their death.

When the birds were about three weeks old they were transferred from the coops and small yards to a large pen, six rods square, which we constructed for them. The siding of this pen is of boards for the first three feet from the ground, on top of which six feet of woven wire fencing is placed, making the pen nine feet high. As the birds became older, on one or two occasions a stray bird was found on the outside of this pen, which with other circumstances satisfied us that we lost some birds which escaped through the wire meshes of the pen. Evidently the birds would fly (and they can fly very young) up against the screen, catch their feet on the wire and force themselves out through the meshes.

We have twenty-six birds left as the result of the season's hatch. These will be wintered over, and we hope to secure a part of the eggs for next year's hatch from them.

BAYFIELD HATCHERY.

The distribution of fish fry from the Bayfield hatchery during the year was as follows:

Wall-eyed pike	11,380,000
Lake trout	7,362,000
Whitefish	3,000,000
Brook trout	328,500
Total distribution.....	22,070,500

The brook trout were distributed to streams along the C., St. P., M. & O. Ry from Bayfield to Eau Claire, and streams within distributing distance of that line of road in that section of the state.

Report of the Superintendent.

The pike were planted in various inland lakes in the northern part of the state and in Chequamegon Bay.

Five million lake trout were planted in Chequamegon Bay, and two million were planted in Lake Michigan and Green Bay off from established fishing points. Without an exception, the fish from this hatchery were reported planted in good condition, and without any loss whatever.

The feeding of an extensive stock of trout with beef liver is a large item of expense at most trout hatcheries. At the Bayfield hatchery liver will form but a very small part of the food for our stock of trout. Last season I conceived the idea of feeding lake herring to our trout. Fish is the natural food of fish, and we find that herring make an excellent food for trout. These fish can be bought cheap in the fall and kept frozen during the winter. In fact, we can feed herring to our trout from November to the following May. We have a refrigerator built and expect to have frozen fish all summer; and if we cannot keep the fish during the hot summer months, another food, in the form of suckers which run up the creek from Chequamegon Bay during the month of May, is at our disposal. These fish can be taken by the thousands and corralled in pens to be used as we need them during the summer months. Large meat cutters, run by water power, are used at both the Madison and Bayfield hatcheries to grind the food for the trout. These machines are so constructed that food can be made coarse or fine as desired for any age of fish. They readily cut the herring which we feed the trout.

Extensive improvements have been made at this hatchery during the year. These consisted mainly of grading and leveling the grounds, building ponds and laying three hundred feet of wooden pipe, two feet in diameter, to conduct the water to the new system of ponds which we have commenced to build. The details of arrangement and construction of additional ponds is needed, and for other improvements hav

Report of the Superintendent.

been perfected, and plans for this purpose drawn; making a harmonious arrangement in every respect.

There will be twenty-five ponds in all. One large pond, which, when completed, will cover three acres of land and have six feet of water at its bulkhead, will be built. A series of twenty-three smaller ponds has been planned, three of which have been built. These ponds will be constructed to meet the requirements of the different ages of trout; and provision will be made for drawing all the water out of each of them as occasion may require for cleaning and scrubbing the ponds, or removing the fish they contain. The sides and bottoms of the ponds will be made of cobblestone, thus securing permanency, which cannot be obtained when ponds are built of wood. The water supply of each pond will be taken in at one end and discharged at the opposite end of the pond, thus giving a heavy current of water throughout the entire length of each pond. An excellent feature in the construction of the ponds lies in the provision made for drawing the water off from every individual pond without effecting the water supply of the others.

The Bayfield hatchery is very fortunate in its location. A large portion of the hatcheries established in the several states and the United States have been located, without due regard for the requirements of such an institution. In due time, such hatcheries usually out-grow their facilities, and it becomes necessary to transfer the work to some other point and perhaps with like results. But such is not the case at Bayfield. On the contrary, an abundance of land and water have been provided to meet the requirements of all time to come.

Bayfield is the fishing center of Lake Superior in Wisconsin. This fact gives the Bayfield hatchery an additional advantage which is, perhaps, not possessed in so great a degree by any other point on the great lakes. It being close to the fishing grounds enables the fish commission to send its

Report of the Superintendent.

agents out among the islands to the several fishing grounds and take the spawn, which is laid down on the trays in the hatchery on the evening of the day on which it is taken from the fish; thus insuring the hatching of a larger percentage of eggs than could be hatched if the eggs were kept on the fishing grounds several days before they could be sent to the hatchery. Good facilities for transporting with despatch the pike eggs collected at various points in the northern part of the state are also afforded.

The capacity of the hatchery is something enormous. The hatching room is 50 x 80 feet. At present only about two-thirds of this room is used for hatching fish. There are thirty hatching troughs with eighty-four trays in each trough, making, in all, two thousand five hundred-twenty trays in use. On these trays at the present time are laid eighty-four and one-half bushels lake trout eggs. The eggs of the lake trout will average eight thousand to the quart, or 256,000 to the bushel, giving a total of 21,632,000 lake trout eggs in the hatchery. There are also 1,050,000 brook trout eggs and 3,000,000 white fish eggs in process of hatching; making a grand total of 26,632,000 ova in the hatchery at the present time. We also expect to lay down from 25,000,000 to 50,000,000 wall-eyed pike ova in this hatchery in the spring. All the eggs in the hatchery are in prime condition at this writing. I believe it will be many years before the Bayfield hatchery will be duplicated in points of equipment and capacity for handling vast quantities of ova and fry.

From the time it was started, the hatchery has been in charge of Mr. Henry Sykes, a trusted employe, who has grown up in the business from boyhood; having been in the service of the fish commission for sixteen years. He is thoroughly versed in the work of fish culture.

Report of the Superintendent.

OSHKOSH STATION.

At the last annual meeting of the board, a committee was appointed to attend to the erection of a building to be used for hatching pike and other fish at Oshkosh. The committee advertised for bids and several were received. The contract was let to the lowest bidder. The building was completed in time to hatch the spring collection of pike-eggs as intended.

I fully expected that we would hatch one hundred million pike fry at this station last spring, but fell considerably short of that number. We were greatly disappointed in the matter of securing the parent fish at Gill's Landing where we had all our apparatus for that purpose. We had set twice as many nets as we ever did before but notwithstanding this fact, we caught, altogether, only 1,583 fish as against 3,276 caught in 1897 and 3,238 in 1896. On account of low water, the fish spawned further down the river than usual, and did not reach the point where our nets were set. It is not probable that this will occur again in many seasons. However, under similar circumstances in the future, we will place another crew of men further down the river so as to make sure of getting a supply of fish. We collected at Gill's Landing some forty million pike eggs.

To guard against any possible fortuity which might occur to prevent us from getting a large supply of pike ova at Gills Landing last spring, I had previously sent a crew of men to "T" lake, Sawyer county, and had nets placed in those waters before the ice went out. At this point we secured a superior lot of fish and from them a large number of excellent eggs. Altogether we collected 110,000,000 pike ova, and distributed some 54,000,000 pike fry. This fry was generally planted in inland lakes, and with the exception of perhaps five or six shipments, in good condition.

Report of the Superintendent.

WHITE BASS.

Acting on your suggestion, the C. & N. W. Ry. Co. and the C., M. & St. P. Ry. Co. fitted up baggage cars to transport full-grown white bass from Winneconne and Oshkosh to the summer resort lakes along their lines. These cars, together with the "Badger," were kept on the road constantly for three weeks or during the run of fish. There were planted 23,420 white bass.

The weather was cool during the entire time we were engaged in this work, and we were careful not to crowd the fish into the tanks. The fish carried much better than ever before.

There is no question in my mind but that this is a good work, and in a few years we will have this species of fish in most of our summer resort lakes, for which they are particularly suited. The waters in which they have been planted are, I believe, naturally adapted to them.

BLACK BASS.

For several years we have collected small black bass from the sloughs and ponds along the Mississippi river for distribution to inland waters.

Last spring the water in the Mississippi river was very low until late in the season; and, as the bass were nearly done spawning before the water raised sufficiently for them to run up into the sloughs, there was not as many bass perished in those waters this year as in some years past. The work of rescuing the bass from the sloughs should be continued each year, notwithstanding it meets with objection from some people along the river. These people object to our taking the bass away from the sloughs and planting them in inland waters. They contend that they should be planted in the Mississippi river. They claim that we do not confine our-

Report of the Superintendent.

selves to taking the fish from the sloughs, but intimate that we steal them from the river for other people's benefit, etc.

Last summer while we were doing this work at Prairie du Chien, a petition was circulated and a number of signatures secured, protesting against our taking the fish from the sloughs. As is usual in signing petitions, not a single signer on that petition took the trouble to try to verify the statements made in the petition or to ascertain whether they were true, which any of them could have done in two-hours time. The petition was presented to them, and in as much as it contained nothing inimical to their individual interests they signed it as a personal favor to the party who circulated it; and in some instances, perhaps, to get rid of him. If they had taken the trouble to investigate the matter, they would be ashamed to have it said that their names were on the petition.

The expense attached to the collection and distribution of bass from the sloughs is considerable. In the park at Oshkosh, where we already have a hatching station, there are two small lakes which can be used to good advantage for the propagation of bass; and I would recommend that steps be taken next spring to utilize the lakes for the purpose stated. The breeding bass can be collected at the mouth of the Fox river where it empties into Lake Winnebago at Oshkosh. I am satisfied that we can hatch and distribute more bass than we have in the past and do the work for less money that it costs us to take them from the Mississippi river sloughs. The lakes in the parks at Oshkosh are natural bass waters, and the city authorities are willing that we should use the ponds for the propagation of fish in any manner that we see fit.

Report of the Superintendent.

OUTLYING WATERS.

The rewards of our efforts to stock our out-lying waters with whitefish have not been as great as we would like for reasons which are readily apparent, chief among which, the catching and marketing of small, immature fish. I need not tell you that thousands of under-sized whitefish have been caught each year in the past, particularly during the month of June, in small meshed pound nets and marketed. This instrument of destruction, illegally used, is largely responsible for the dearth of whitefish in our great lakes today. Some years since, I saw as high as 2,500 pounds of whitefish caught at the mouth of Big Sturgeon in a pound net at one lift in the month of November, and there were not fifty pounds of "No. 1" whitefish in the entire lot.

If all the small whitefish which have been caught and marketed during the past twelve years, contrary to law, had been left in the waters to mature, we might have been able to tell of the grand success of planting whitefish fry in the great lakes instead of having to admit that we have not received adequate returns on our investment in this great work.

What I have said of depleting our waters of whitefish by catching the young, immature fish is also true of lake trout, though the manner of taking the lake trout is different. During the last few years, the fishermen have found it profitable to set small meshed gill nets to catch chubs, bluefin and herring. With these small-meshed nets they have caught large quantities of undersized lake trout. This should not be permitted to continue if we are to keep the lake trout in our waters and on the market as a commercial fish for future generations.

I am pleased to be able to report an increase in the catch of whitefish this season over several previous years in both Lakes Superior and Michigan and Green Bay.

Report of the Superintendent.

CLOSE SEASON.

The close season law greatly interferes with the collection of spawn on Lake Michigan, and prevents the collection of as large a number of eggs as would otherwise be possible for the hatcheries. It is a serious drawback in our work and does not achieve the purpose for which it was enacted; for, granted that it protects the large fish for the time being, the eggs which are deposited by the spawning fish are practically wasted. I contend that not one egg in a million deposited by the whitefish, lake trout or pike in the unaided natural way is fertilized; and even if a greater number were fertilized, the suckers, lawyers and other coarse fish which follow the lake trout and whitefish upon their beds would and do devour them, excepting such as may fall into inaccessible cracks and crevices in the rocks and among the stones.

Last fall I watched at various times the spawning beds of brook trout upon which from twenty-five to thirty trout could be seen at one time. I had a position within ten feet of the spawning bed, and watched them several hours each day for a week. During this time I did not see a single instance of spawning in which I thought it possible for a male trout to fertilize a single egg deposited by the females. I afterwards examined the beds, but found only one egg in all the time I spent in this work. I concluded that the trout devoured the eggs as soon as deposited. To satisfy myself on this point, I took with me a quantity of eggs from the hatchery. On arriving at the beds I waded into the stream, and with a small scap net placed the eggs on the nests about as I thought they would be placed by the parent fish naturally. I had hardly reached the bank of the stream again before the fish were back on the beds. They at once discovered the eggs which I had laid upon the nests, and like a pack of hungry wolves set to work to devour them. With their noses in the sand and tails out of water they turned over every stone and grave' in

Report of the Superintendent.

energetic search of the eggs; and in less than twenty minutes there was not an egg on the beds.

Whitefish will devour their eggs in like manner. In fact all species will eat the ova of their own kind as well as that of all other species.

It is the mission of the fish culturist to save a portion of the infinite mass of fish ova wasted by the means I have outlined, to fertilize the ova thus saved, and eventually plant in the waters the vast number of fish represented by the eggs saved, thus maintaining the supply of food fish in our waters.

To many people, hand propagation of fish is a species of sacrilege. It is an impeachment of nature and her provisions for the survival of the genus fish. Not so. Nature's provisions for the survival of the fish families were adequate until man entered upon their destruction with improved fishing apparatus, and wastefully and extravagantly pursued his work of devastation until now many species are wellnigh extinct. It is due to man's folly that our waters are barren, and it is left for him to again make them productive. Nature has provided the means. He has only to exercise in this case those qualities of forbearance and wisdom by which he has accomplished many great and wonderful things in the past.

I hold that there is but one way of increasing the supply of food fish in the great lakes under present conditions, i. e., by planting large numbers of lake trout and wall-eyed pike fry from the state hatcheries, and preventing the catching and marketing of small, immature fish. A close season, by stepping between the fish culturist and the parent fish during the spawning season, prevents the saving of millions of fish ova and the planting of millions of fish fry back into the waters.

It is desirable that uniform legislation for the protection of the commercial fish of the great lakes be enacted by the legislatures of the several states bordering upon those waters. Steps looking to this end have already been taken, and if

Report of the Superintendent.

they end in securing good laws and those laws are well enforced throughout the entire great lake waters, the result must be beneficial and will be generally productive of good results to the fishing industry. The key to such legislation should be to prohibit the catching and marketing of small immature fish.

CONCLUSION.

Appended hereto are tabular statements showing in detail the distribution of fish during the biennial period, 1897 and 1898.

Pursuant to the provisions of section 7, chapter 222, laws of 1897, two barrels of whitefish (one hundred ninety fish) which were injured while taking spawn at Long Lake, Washburn county, in the fall of 1897, were delivered to Robert Miller, Supt. Barron county poor farm, Barron, Wis., for use at that institution. This is the only case in which it was found necessary to dispose of fish under the provisions of this section during the two years covered by this report.

In all departments of work I have endeavored to keep down expenses as much as possible; and I believe that every article purchased was absolutely necessary to the proper performance of the work in which it was used.

The enforcement of the fish and game laws is not connected with the fish commission's work. It has, however, a direct bearing upon it and the commission has at all times manifested a lively interest in this branch of fish propagation. Credit is due to Hon. Jas. T. Ellarson, state fish and game warden, and his deputies for the efficient service they have rendered the state in carefully and closely attending to the duties imposed upon them by law. The increased catch of whitefish in Lakes Superior and Michigan and Green Bay I attribute very largely to their activity in preventing the marketing of small immature fish.

Report of the Superintendent.

On the whole, the work of the board is in excellent form, and I believe the commission is in better position to fulfill the mission for which it was organized than at any other time in its history.

I gratefully acknowledge the kind consideration accorded me at all times by the several members of the board. I shall zealously endeavor to merit a continuance of your confidence, and to that end I pledge my best efforts to the work entrusted to me.

JAS. NEVIN,
Superintendent.

Madison, Wis., January 2, 1899.

Distribution of Fish.

BROOK TROUT DISTRIBUTION, 1897.

Name and Address of Applicant.	Where Planted.	No. of Fish.
ADAMS COUNTY—		
R. Thuel, Necedah.....	Big Roch-a-cris Creek	3,500
S. W. Pierce, Necedah.....	Witters Creek	3,500
	Risk Creek	3,500
		10,500
ASHLAND County—		
C. A. Lamoreaux, Ashland.....	Brunsweller Creek	7,000
	Trout Brook	7,000
	Spring Creek	7,000
	Butternut Creek	14,000
		35,000
BARRON COUNTY—		
F. E. Bailey, Rice Lake.....	Cob Creek	3,500
A. A. Gabriel, Rice Lake	Rock Creek	3,500
Mark Eubanks, Rice Lake	Pekegema Creek	3,500
N. W. Heintz, Rice Lake	Silver Creek	3,500
W. H. Brandt, Barron.....	Red-eye Creek	3,500
DeWitt Post, Barron	Hay River	3,500
T. W. Borum, Barron.....	Pine Creek	7,000
John Post, Barron	Miller's Creek	3,500
J. A. Anderson, Dallas.....	Miller's Creek	3,500
D. A. Russen, Dallas.....	South Sioux Creek	3,500
E. A. Felton, Dallas.....	Doe Creek	3,500
W. S. Foster, Dallas.....	North Pine Creek	3,500
		45,500
BUFFALO COUNTY—		
Ed. Ford, Mondovi.....	Hoyt Creek	3,500
Jas. T. Bronlee, Mondovi.....	Hunter Creek	3,500
Ed. Turner, Gilmanton.....	Turner Creek	3,500
Henry Davis, Gilmanton.....	Davis Creek	3,500
Myron Amidon, Mondovi.....	Bennett Valley Creek.....	7,000
H. M. Nogle, Mondovi.....	Fifteen Mile Creek.....	7,000
Jos. Pabst, Mondovi.....	Dutch Creek	7,000
		35,000
CHIPPEWA COUNTY—		
F. L. Stevens, Chippewa Falls.....	Little Beaver Creek.....	7,000
L. Vincent, Chippewa Falls.....	Murphy Creek	3,500
J. C. Detloff, Chippewa Falls.....	Duncan Creek	3,500
Thad. C. Pound, Chippewa Falls.....	Chippewa Spring Brook	7,000
L. Hattimer, Bloomer.....	West Fork, O'Neil Creek.....	7,000
E. H. Rodgers, Bloomer	Martin Creek	3,500
	Gunn Creek	3,500
		35,000
CLARK COUNTY—		
F. P. Kipp, Lindsey	Little Black Creek	3,500
G. R. Klopf, Neillsville.....	Visno Creek	3,500
Chas. Servanty, Neillsville.....	Wedges Creek	3,500
Ed. Crossett, Neillsville	Hay Creek Branch	3,500
		14,000
CRAWFORD COUNTY—		
Chas. Enke, Prairie du Chien.....	Grand Grey Creek	7,000
J. A. Dworak, Wauzeka.....	Plum Creek	3,500
Aug. Kesler, Wauzeka.....	Grand Grey Creek.....	3,500
C. W. Lathrup, Barnum.....	Shaw Branch	3,500
	Myres Branch	3,500
J. A. Hays, Gays Mills.....	Bacon Creek	3,500
	Copper Creek	3,500
	Wells Creek	3,500

Distribution of Fish.

BROOK TROUT DISTRIBUTION, 1897—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
CRAWFORD COUNTY—Continued.		
D. R. Lawrence, Petersburg.....	Cow Creek	3,500
W. S. Manning, Soldiers' Grove.....	Johnson Creek	7,000
	Trout Creek	3,500
J. O. Davidson, Soldiers' Grove.....	Soldiers' Grove Creek.....	7,000
	Knapp's Creek	3,500
T. Garrity, Soldiers' Grove.....	Bear Creek	7,000
M. Hendrickson, Soldiers' Grove.....	Johnson Creek	7,000
		70,000
DANE COUNTY—		
O. E. Stamm, New Glarus	Branch of Sugar River.....	3,500
W. C. B. Weltzen, Primrose.....	Branch of Sugar River.....	3,500
J. E. Stanford, Black Earth.....	Reeve's Creek	7,000
H. H. Willard, Mazomanie.....	Boyle Creek	7,000
Jas. Schaffer, Mazomanie.....	Porter's Creek	7,000
T. J. Hughes, Black Earth.....	Olmer's Creek	7,000
Geo. Thatcher, Black Earth.....	Erby Creek	3,500
D. D. Logan, Black Earth.....	Mann Creek	3,500
		42,000
DOUGLAS COUNTY—		
Antoine Gordon, Gordon.....	Ox Creek	7,000
DUNN COUNTY—		
W. H. Bailey, Menomonie.....	Irving Creek	3,500
John Steele, Menomonie	Wilson Creek	3,500
E. J. Newsome, Menomonie.....	Brush Creek	3,500
Ole Berg, Menomonie.....	Loving Creek	3,500
J. H. Stout, Menomonie.....	Little Elk Creek	7,000
		21,000
EAU CLAIRE COUNTY—		
J. T. Joyce, Eau Claire.....	Nine Mile Creek.....	3,500
	Elk Creek	3,500
B. S. Phillips, Eau Claire.....	Rock Creek	3,500
	Coon Creek	3,500
A. A. Cutter, Eau Claire.....	Otter Creek	3,500
	Clear Creek	3,500
M. Cousins, Eau Claire.....	Lowe's Creek	3,500
	Beaver Creek	3,500
C. Volkman, Eau Claire.....	Coon Creek	7,000
Henry Russell, Augusta.....	Bridge Creek	7,000
		42,000
FOND DU LAC COUNTY—		
E. C. Reichmott, Ripon.....	White Creek	3,500
H. P. Cody, Ripon.....	Silver Creek	3,500
H. C. Eversz, Ripon.....	Snake Creek	3,500
L. B. Reed, Ripon.....	Roy Creek	3,500
T. S. Chittenden, Ripon.....	Dakin's Creek	3,500
E. J. Burnside, Ripon.....	Know's Creek	7,000
Chas. F. Geisse, Fond du Lac.....	Parson's Creek	3,500
	Camp Ground Creek.....	3,500
G. H. Miller, Fond du Lac.....	E. Br'ch of Fond du Lac Riv.	7,000
S. B. Amory, Fond du Lac.....	Head, Sheboygan River.....	7,000
M. J. McCullough, Campbellsport...	Virgin Creek	3,500
	Haskin's Creek	3,500
H. Durand, Fond du Lac.....	Byron Creek	3,500
	Empire Creek	3,500
J. J. Gromme, Fond du Lac.....	Gill's Branch	7,000
G. Van de Grinten, New Cassel.....	Haskin Creek	3,500
Wm. Wedde, Campbellsport.....	Hahn's Creek	3,500
Robt. Denz, Elmore.....	Elmore Stream	3,500
Wm. Klumb, Elmore.....	Elmore Creek	3,500
		80,500

Distribution of Fish.

BROOK TROUT DISTRIBUTION, 1897—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
GRANT COUNTY—		
J. Fawcett, Platteville.....	Block House Branch.....	7,000
W. S. Peters, Muscoda.....	Lucas Branch.....	3,500
H. Pheister, Muscoda.....	Gault Branch.....	3,500
J. P. Esch, Muscoda.....	Sand Branch.....	3,500
M. G. Myer, Muscoda.....	Big Spring Branch.....	3,500
F. G. Hasler, Muscoda.....	Cody Spring.....	3,500
H. Ellingson, Boscobel.....	Seeley Branch.....	10,500
F. W. Schmitt, Boscobel.....	Chitwood Branch.....	10,500
J. B. Johnson, Montfort.....	Blue River.....	7,000
O. P. David, Montfort.....	Grant River.....	7,000
B. Johnson, Castle Rock.....	West Brch., Blue River.....	7,000
O. Thomas, Montfort.....	Dark Hollow Creek.....	3,500
	Badger Hollow Creek.....	3,500
D. O. Eustice, Livingstone.....	Head of Platte River.....	3,500
J. J. Scanlan, Fennimore.....	Trainer's Creek.....	3,500
	Faith's Creek.....	3,500
J. W. Beetham, Fennimore.....	Fennimore Branch.....	3,500
	Johnson Branch.....	3,500
F. N. Kern, Fennimore.....	Johnson Branch.....	3,500
	Fennimore Branch.....	3,500
W. D. Burr, Lancaster.....	William's Branch.....	3,500
J. A. McPherson, Ellenboro.....	McPherson Branch.....	3,500
Chas. Henry, Ellenboro.....	Willow Branch.....	3,500
Fred Orton, Lancaster.....	Milner Branch.....	3,500
	McKenzie Branch.....	3,500
A. J. Howell, Lancaster.....	Day Branch.....	3,500
Geo. H. Baxter, Lancaster.....	Borah Branch.....	3,500
	Walker Branch.....	3,500
S. E. Hassell, Lancaster.....	Austin Branch.....	7,000
		136,500
GREEN COUNTY—		
S. D. Fisher, Brodhead.....	Branch of Sugar River.....	7,000
IOWA COUNTY—		
J. Bearsley, Mineral Point.....	Fitzsimmons' Creek.....	3,500
P. Hewitt, Mineral Point.....	Hewitt Branch.....	3,500
N. T. Martin, Mineral Point.....	Rock Branch.....	3,500
David Brown, Mineral Point.....	Brown's Branch.....	3,500
Jas. Wearne, Mineral Point.....	Dodge Branch.....	3,500
C. Wieren, Mineral Point.....	Fitzsimmons' Creek.....	3,500
Josephus Bailey, Cobb.....	Head-waters, Blue River.....	7,000
J. W. Starry, Barneveld.....	Harris Creek.....	3,500
	Walnut Hollow Creek.....	3,500
	Jones Creek.....	3,500
J. D. Reese, Barneveld.....	Jones Valley Creek.....	3,500
Thos. Thomas, Dodgeville.....	Head, Pecatonica River.....	7,000
S. W. Reese, Dodgeville.....	Ox Hollow Creek.....	3,500
S. W. Reese, Dodgeville.....	Angore Creek.....	3,500
	Harker Creek.....	3,500
	Blanchard Creek.....	3,500
Fred Jewell, Dodgeville.....	Head-waters, Pecatonica.....	7,000
		70,000
JACKSON COUNTY—		
J. B. Miller, Alma Center.....	Arnd Creek.....	3,500
	Hall's Creek.....	3,500
R. D. Squires, Black River Falls.....	Squaw Creek.....	7,000
H. J. Ormsby, Black River Falls.....	Snow Creek.....	3,500
	Allen Creek.....	3,500
W. F. Gearing, Melrose.....	Douglas Creek and Tribs.....	7,000
David Barclay, Black River Falls.....	Hoffman Creek.....	7,000
Nicholas Gruber, Black River Falls.....	Van Herset Creek.....	3,500
	Town Creek.....	3,500
		42,000

Distribution of Fish.

BROOK TROUT DISTRIBUTION, 1897—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
JEFFERSON COUNTY—		
C. C. Cash, Palmyra.....	Scuppernong Creek	3,500
	Minnehaha Creek	3,500
E. R. Trippe, Palmyra.....	Palmyra Springs Creek.....	3,500
L. A. Washburne, Palmyra.....	Aurelin Spring Creek.....	3,500
		14,000
JUNEAU COUNTY—		
J. Nasbit, Wonewoc.....	Big Spring Creek	3,500
Henry Grimshaw, Elroy.....	Garwin Creek	3,500
	Boynton Creek	3,500
C. E. Wolfenden, Wonewoc.....	Crossman Creek	3,500
	Wolfenden Creek	3,500
J. E. Daly, Necedah.....	Johnson's Creek	3,500
	Wris Creek	3,500
F. A. Reed, Necedah.....	Schoonover Creek	3,500
	Spring Creek	3,500
		31,500
LA CROSSE COUNTY—		
O. Evenson, West Salem.....	Halfway Creek	3,500
John Trehoff, La Crosse.....	Mormon Cooley Creek.....	3,500
J. R. Jenkins, Rockland.....	Big Creek	3,500
James Hammon, La Crosse.....	Chipmunk Cooley Creek	3,500
M. Tourtellotte, La Crosse.....	Auretz's Creek	3,500
	Kernz's Creek	3,500
Henry Heil, La Crosse.....	Smith's Creek	3,500
Buttles and Pierce, Onalaska.....	Spring Cooley Creek	3,500
	Jostad Creek	3,500
F. C. Herrington, La Crosse.....	Clear Creek	7,000
	Mill Creek	7,000
	Halfway Creek	7,000
Jas. McCord, La Crosse.....	Kralle Creek	7,000
A. Hirschheimer, La Crosse.....	N. Branch of Coon Creek.....	3,500
	Ahrens Creek	3,500
Benedict Ott, La Crosse.....	Mormon Cooley Creek	7,000
Chas. Barber, Onalaska.....	Halfway Creek	3,500
Alex. Johnson, West Salem.....	McEldowney Creek	3,500
	Martin's Creek	3,500
	Jones' Creek	3,500
	Larson's Creek	3,500
	Gill's Cooley	3,500
	Barr Mill's Creek	3,500
John Markl, La Crosse.....	Mormon Cooley Creek	7,000
Jas. J. Hogan, La Crosse.....	Fishback Creek	7,000
	Tauschl Creek	7,000
John Erickson, Rockland.....	Fish Creek	3,500
		122,500
LA FAYETTE COUNTY—		
Michael Derrick, Fayette.....	Finley's Branch	3,500
E. T. W. Barnes, Darlington.....	Whiteside Branch	3,500
	Johny Creek	3,500
F. E. Bordner, Darlington.....	Otter Creek	3,500
L. A. Sandefur, Darlington.....	Russell's Branch	3,500
Wm. A. Garden, Belmont.....	Burr's Branch	3,500
	Bewey Branch	3,500
		24,500
LINCOLN COUNTY—		
J. P. Hughes, Tomahawk.....	Pine Creek	3,500
H. A. Atcherson, Tomahawk.....	Squaw Creek	7,000
H. C. Hetzel, Merrill.....	N. Branch, Pine River.....	7,000
F. B. Gallagher, Merrill.....	Hay Meadow Creek	7,000

Distribution of Fish.

BROOK TROUT DISTRIBUTION, 1897—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
LINCOLN COUNTY—Continued.		
Julius Thielman, Merrill.....	North Brch., Prairie River...	7,000
Alex. F. Empey, Merrill.....	Barn's Creek	7,000
J. H. Froehlich, Tomahawk.....	Spring Creek	7,000
R. C. Thielman, Tomahawk.....	Rocky Run	7,000
Fitzgerald Bros., Tomahawk.....	N. Brch., Little Rice Riv.....	7,000
		56,000
MARATHON COUNTY—		
Frank Kelley, Wausau.....	Kickbusch Creek	3,500
S. E. Dickenson, Wausau.....	Little Creek	3,500
Neal Brown, Wausau.....	Plover River	14,000
F. W. Burt, Wausau.....	Eau Claire River.....	14,000
F. P. Corwith, Wausau.....	Jim Moore Creek	7,000
O. E. O'Dell, Wausau.....	Little Rib River	14,000
John Creary, Wausau.....	Big Rib River.....	14,000
B. N. Thomas, Wausau.....	Bull Junior Creek	7,000
J. T. Winkley, Wausau.....	Bear Creek	7,000
R. W. Pinder, Wausau.....	Spring Creek	3,500
		87,500
MARINETTE COUNTY—		
W. A. Brown, Marinette.....	Big Cold Spring Creek.....	7,000
	Outlet to Frying Pan Lake...	7,000
G. W. Taylor, Marinette.....	Outlet to Mountain Lake.....	14,000
	Water Cress Creek	7,000
		35,000
MARQUETTE COUNTY—		
John Hays, Oxford.....	Jones' Creek	3,500
	Reed Creek	3,500
J. H. Coon, Oxford.....	Campbell Creek	7,000
C. E. Pond, Westfield.....	Shatzke Creek	7,000
C. W. Daye, Liberty Bluff.....	Chaffee Creek	3,500
Wm. Guderjahn, Liberty Bluff.....	Wood Creek	3,500
M. W. Phillips, Westfield.....	Head-waters, Montello River.	7,000
Meinke & Behn, Westfield.....	Duck Creek	3,500
	Pine Creek	3,500
		42,000
MONROE COUNTY—		
North Vice, Cataract.....	Big Creek	7,000
D. C. Hope, Sparta.....	Silver Creek	7,000
E. W. Crane, Sparta.....	Big Creek	7,000
C. E. Simpson, Sparta.....	Head-waters, La Crosse Riv.	7,000
John A. Sholts, Sparta.....	Swamp Creek	7,000
F. J. French, Sparta.....	Kemp Brook	7,000
Louis T. Hill, Sparta.....	Shattuck Creek	3,500
	Soper Creek	3,500
Ira A. Hill, Sparta.....	Ayers' Creek	3,500
	Sargent Creek	3,500
F. L. Shaller, Sparta.....	Snyder's Creek	3,500
	Castle Rock Creek.....	3,500
C. W. Hins, Sparta.....	Tar Creek	3,500
	Squaw Creek	3,500
Isaac Jensen, Cashton.....	Upper Coon Creek.....	3,500
Homer Lombard, Cashton.....	Little La Crosse Creek.....	3,500
Henry Oswald, Leon.....	Pleasant Valley Creek.....	7,000
C. Bakkon, Cashton.....	Brush Creek	3,500
Chas. Todd, Wilton.....	Tramur's Creek	3,500
	Staten Creek	3,500

Distribution of Fish.

BROOK TROUT DISTRIBUTION, 1897—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
MONROE COUNTY—Continued.		
Saml. Sloggy, Norwalk.....	Cook Creek	3,500
	Brush Creek	3,500
	Billings' Creek	3,500
	Moore's Creek	3,500
H. C. McGeary, Norwalk.....	Moore's Creek	3,500
W. H. Schultz, Tomah.....	Sparta Creek	7,000
	Alton Creek	7,000
	Vandervoort Creek	3,500
	Black's Creek	3,500
	Deer Creek	3,500
	Flora Creek	3,500
		140,000
OCONTO COUNTY—		
Chas. Hall, Oconto.....	Little River	10,500
	South Branch	7,000
		17,500
ONEIDA COUNTY—		
C. C. Yawkey, Hazlehurst.....	Kitty Creek	7,000
PIERCE COUNTY—		
D. C. Munger, Maiden Rock.....	Rush River	7,000
M. D. Cassiday, Maiden Rock.....	Rush River	7,000
J. B. Carson, Brassington.....	Spring Creek	7,000
J. W. Losey, La Crosse.....	Rush River	7,000
		28,000
POLK COUNTY—		
Frank Fiske, Turtle Lake.....	Spring Brook	7,000
PORTAGE COUNTY—		
J. C. Frost, Stevens Point.....	Gardner's Creek	7,000
Aug. Walkush, Cassimere.....	Hay Meadow Creek	7,000
Thom. Lehman, Rosholt.....	S. Branch, Little Wolf.....	7,000
Carl. O. Doxrud, Nelsonville.....	Waupaca River	7,000
J. T. Moore, Nelsonville.....	Trib., Waupaca River	7,000
John M. Higgins, Custer.....	Seitzer Brook	7,000
H. Simpier, Stevens Point.....	Little Plover River	7,000
		56,000
PRICE COUNTY—		
C. M. Durace, Phillips.....	Little Elk Creek.....	14,000
E. D. Sperry, Phillips.....	Big Elk Creek	14,000
C. S. Webster, Phillips.....	Trout Run	7,000
		35,000
RICHLAND COUNTY—		
C. G. Cole, Woodstock.....	Pugh's Branch	3,500
V. J. Stanck, Yuba.....	Pine River	7,000
H. W. Leaterbessy, Hub City.....	Myer's Creeks	7,000
E. L. Meeker, Woodstock.....	Fancy Creek	7,000
R. J. Washburn, Richland Center.....	Buck Creek	3,500
Owen Miller, Richland Center.....	John's Hollow Creek	3,500
A. J. Dickinson, Lone Rock.....	Callahan Branch	3,500
	Maxwell Branch	3,500
Chas. Rowley, Lone Rock.....	Carl Creek	3,500
M. D. Elliot, Lone Rock.....	Weitzel Creek	3,500
Jas. Nolan, Sextonville.....	Little Bear Creek	7,000
H. W. Haskell, Sr., Lone Rock.....	Martell Creek	3,500
	Hellenbeck Creek	3,500
N. L. Ewers, Mill Creek.....	Ewer's Branch	3,500
		63,000

Distribution of Fish.

BROOK TROUT DISTRIBUTION, 1897—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
SAUK COUNTY—		
F. M. McClure, Reedsburg.....	Branch of Narrow's Creek...	3,500
Frank Foss, Reedsburg.....	Beaver Creek	3,500
Henry Scherve, Reedsburg.....	Dell Creek	3,500
J. W. Davis, Baraboo.....	Big Spring Creek	3,500
Frank Herfort, Baraboo.....	Helm's Creek	3,500
C. C. Thompson, Baraboo.....	Branch, Dell Creek.....	3,500
J. E. English, Baraboo.....	Seeley Creek	3,500
G. E. Talbot, Lime Ridge.....	Narrow's Creek	3,500
L. E. Hoyt, Baraboo.....	Spring Creek	3,500
E. G. Marriott, Baraboo.....	Leach Creek	3,500
A. Beckwith, Dixon.....	Little Bear Creek.....	3,500
B. D. Sherwood, Spring Green.....	Wilson Creek	7,000
		45,500
TREMPEALEAU COUNTY—		
E. T. Clark, Galesville.....	Beaver Creek	3,500
	Dutch Creek	3,500
Chas. Sonnenberg, North Bend.....	Tributary of Beaver Creek..	7,000
F. G. Davis, Galesville.....	Mason's Creek	3,500
	French Creek	3,500
E. A. Miller, Hixton.....	N. Brch., Trempealeau River	3,500
	S. Brch., Trempealeau River	3,500
E. S. Hotchkiss, Independence.....	Travis Creek	3,500
	Borst Valley Creek.....	3,500
		35,000
VERNON COUNTY—		
H. J. Seaverson, Westby.....	Sea's Branch	3,500
Lars Tomting, Westby.....	Larson Creek	3,500
Olef Peterson, Westby.....	Timber Creek	3,500
Olef Noer, Westby.....	Baklien Creek	3,500
J. W. Groves, Madison.....	Brush Hollow Creek.....	10,500
	Elk Run	10,500
Albert Mockrud, Westby.....	Mortensen Creek	7,000
Frank S. Mott, Viroqua.....	South Bad-axe Creek.....	3,500
M. B. Davidson, Westby.....	Sveen's Creek	3,500
J. Henry Tate, Viroqua.....	Brookville Branch	3,500
C. D. Williams, Viroqua.....	Branch of Bad-axe	3,500
H. D. Williams, Viroqua.....	Hinkst Branch	3,500
F. M. Minshall, Viroqua.....	Bishop Branch	3,500
J. W. Mills, Viroqua.....	Esofea Brch. of Bax-axe.....	3,500
J. K. Schriener, Westby.....	Bagiin Creek	3,500
E. J. Sveen, Westby.....	W. Brch. of West Kickapoo..	3,500
C. T. Shannon, Westby.....	Spring Creek	3,500
A. J. Johnson, Viroqua.....	Purdy Brch. of Bad-axe.....	3,500
		80,500
VILAS COUNTY—		
Williams Salsich Co., Star Lake.....	Lost Creek	7,000
	Donahue Creek	3,500
	Plum Creek	7,000
	Gleason Creek	3,500
	Johnson Creek	7,000
	Head of Manitowish River...	7,000
		35,000
WALWORTH COUNTY—		
T. D. Weeks, Whitewater.....	Bluff Stream	7,000
Chas. S. Weeks, Whitewater.....	Scanlan Creek	3,500
	Harris Stream	3,500
H. M. Trippe, Whitewater.....	Whitewater Lake Creek.....	3,500
	Lake Creek	3,500
R. H. Johnson, Whitewater.....	Territorial Brook	3,500
	Ward Brook	3,500
		28,000

Distribution of Fish.

BROOK TROUT DISTRIBUTION, 1897—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
WASHBURN COUNTY—		
Wm. Busch, Spooner.....	Beaver Brook	14,000
WASHINGTON COUNTY—		
S. F. Mayer, West Bend.....	Eigman Creek	7,000
	Cedar Creek	7,000
H. B. Kaempfer, West Bend.....	Silver Creek	7,000
		21,000
WAUKESHA COUNTY—		
J. A. Lins, Eagle.....	Branch of Supernong Creek..	7,000
Wm. H. Tuohy, Eagle.....	Long's Creek	3,500
Henry M. Lobl, Eagle.....	Minnehaha Creek	3,500
		14,000
WAUPACA COUNTY—		
Geo. Jeffers, Sheridan.....	Peterson's Creek	3,500
Orr Decker, Waupaca.....	Dayton Creek	3,500
	Crystal River	3,500
John Jobson, Sheridan	Silver Creek	3,500
Robt. Gibbons, Sheridan.....	Howard Creek	3,500
H. N. Jeffers, Sheridan.....	Knudsen Creek	3,500
Oliver Olfson, Sheridan.....	Silver Creek	3,500
Sam. Torgerson, Sheridan.....	Headland Creek	3,500
Fred Johnson, Sheridan.....	Waupaca Creek	3,600
A. P. Andrews, Sheridan	Harris Creek	3,500
H. Olfson, Sheridan.....	Steadman Creek	3,500
C. E. Chamberlain, Waupaca.....	Rice Creek	7,000
Wm. Rutherford, Waupaca.....	Hunter Creek	7,000
F. M. Clark, Wild Rose.....	Willow Creek	7,000
		59,500
WAUSHARA COUNTY—		
Elmer Walker, Wautoma.....	Mecan River and Tribs.....	14,000
D. Hoxie, Wautoma.....	White River and Tribs.....	14,000
Wm. Berrie, Wautoma.....	Tribs. to White River	14,000
W. L. Roberts, Wautoma.....	Mecan River	7,000
	Lunch Creek	7,000
W. A. Bugh, Wautoma.....	White River and Tribs.....	14,000
E. M. Smith, Coloma.....	Wedde Creek	3,500
Chas. Bassett, Coloma.....	Roch-a-cris Creek	3,500
Thos. Feane, Coloma.....	Willard Creek	3,500
John Shorey, Coloma Station.....	Wadey Creek	3,500
W. J. Johnson Coloma Station.....	Little Roch-a-cris Creek.....	3,500
W. A. Roblier, Coloma Station.....	Bassett Creek	3,500
J. S. Williams, Plainfield.....	Ten-mile Creek	7,000
Fred Heller, Richford.....	Mecan River, above dam.....	3,500
C. Rogers, Richford.....	N. Brch., Wadde Creek.....	3,500
W. H. Campfield, Hancock.....	Lunch Creek	3,500
L. W. Beach, Hancock.....	Little Roch-a-cris Creek.....	3,500
H. J. Hawkins, Coloma Station.....	Cowlen Creek	3,500
C. W. Lindsay, Hancock.....	King Creek	3,500
Wm. H. Harris, Richford.....	Mecan Creek	3,500
Matt. Westover, Pine River.....	Pine River	3,500
Wm. Stewart, Berlin.....	Willow Creek	7,000
John Fuller, Spring Lake.....	Maars Creek	3,500
Geo. H. Fuller, Spring Lake.....	Spring Brook	3,500
E. F. Kimball, Pine River.....	Reams Creek	3,500
Fred Dewey, Pine River.....	Panairsdale Creek	3,500
Louis Rverson, Pine River.....	Silver Creek	3,500
G. H. Carpenter, Pine River.....	Oliner's Creek	3,500
J. F. Leach, Spring Lake.....	Maars Creek	3,500
		157,500
Total distribution for 1897.....		1,949,000

Distribution of Fish.

RAINBOW TROUT DISTRIBUTION, 1897.

Name and Address of Applicant.	Where Planted.	No. of Fish.
ASHLAND COUNTY—		
Jos. Carl, Glidden.....	Carl's Creek	6,000
Henry Hayton, Glidden.....	Dryden Creek	6,000
Geo. Sell, Glidden.....	Magee Creek	6,000
Wm. G. Fordyle, Glidden.....	Weber Lake and Creek.....	6,000
		24,000
BROWN COUNTY—		
E. L. Tyrel, Green Bay.....	Trout Creek	3,000
	Beaver Dam Creek	3,000
	Cold Water Creek.....	3,000
Ben. Smith, Green Bay.....	Potter Creek	6,000
J. L. Wilcox, Green Bay.....	Whipple Brook	6,000
		21,000
BAYFIELD COUNTY—		
L. H. Lien, Mason.....	Marengo River	6,000
BUFFALO COUNTY—		
Allan Cowie, Arcadia.....	Fernholz Creek	6,000
L. P. Hunner, Alma.....	Little Waumandee	6,000
	Trout Creek	6,000
	Mill Creek	6,000
	Pine Creek	6,000
Erik Alme, Nelson.....	Bear Creek	3,000
	Centre Creek	3,000
Peter Mathys, Tell.....	Trout Creek	6,000
		42,000
CALUMET COUNTY—		
M. Bell, Marytown.....	Pine River	6,000
John Bruipel, Cedarburg.....	Sheboyan River	6,000
N. Mahlborg, Charlesburgh.....	Manitowoc River	6,000
Jos. Wolfinger, Dundas.....	Woodville Lake	12,000
		30,000
CHIPPEWA COUNTY—		
S. R. Kaiser, Cadott.....	Bentley Creek	3,000
	Turner Creek	3,000
		6,000
CLARK COUNTY—		
Chas. A. Vandusen, Thorpe.....	Marshall Creek	6,000
C. G. Stow, Loyal.....	Bear Creek	3,000
	Rock Creek	3,000
		12,000
COLUMBIA COUNTY—		
M. D. Olson, Rio.....	Cuff Creek	6,000
John Haysey, Columbus	John's Spring Brook.....	6,000
A. D. Bowman, Kilbourn City.....	Atcherson's Creek	3,000
	Cooning Creek	3,000
		18,000
DANE COUNTY—		
F. A. Schaffrit, Mt. Horeb.....	German Valley Creek.....	6,000

Distribution of Fish.

RAINBOW TROUT DISTRIBUTION, 1897—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
DUNN COUNTY—		
G. N. Amble, Colfax.....	Broken Creek	6,000
John L. Berg, Colfax.....	Little Otter Creek	6,000
		12,000
EAU CLAIRE COUNTY—		
Henry Russell, Augusta.....	Bridge Creek	3,000
Chas. N. Hatredt, Eau Claire.....	Hay Creek	3,000
A. C. Larson, Eau Claire.....	Otter Creek	6,000
	Elk Creek	6,000
		18,000
FOREST COUNTY—		
John Kiernan, Armstrong Creek.....	Armstrong Creek	6,000
GRANT COUNTY—		
Jas. Alderson, Lancaster.....	Pigeon Creek	3,000
F. M. Cronin, Lancaster.....	Austin Branch	3,000
Thomas McDonald, Lancaster.....	Grant River	3,000
	Platte River	3,000
	Little Grant River.....	6,000
A. Schmitt, Lancaster.....	Grant River	6,000
	Pigeon Creek	3,000
O. P. David, Montfort.....	Bushnell Hollow Creek	3,000
A. Devoe, Boscobel.....	Grant Creek	6,000
E. C. Bryan, Boscobel.....	N. Branch of Ruland Creek.....	6,000
	Richland Creek	3,000
J. B. Nauert, Boscobel.....	Pullen Branch	3,000
E. B. Smith, Boscobel.....	Saunders' Creek	6,000
Chas. McMillan, Boscobel.....	Knapp's Creek	6,000
	W. Branch of Coon Creek....	3,000
	Saunders' Creek	3,000
		66,000
GREEN COUNTY—		
H. C. Putnam, Brodhead.....	Sugar River	12,000
IOWA COUNTY—		
H. R. Carter, Jonesdale.....	Higgon's Creek	3,000
Clarence Suthers, Mineral Pt.....	Tobin Creek	3,000
	Rock Branch	6,000
		12,000
IRON COUNTY—		
G. W. Buck & Son, Manitowish.....	Lake Harris	6,000
D. C. Fifield, Gile	Island Lake	6,000
		12,000
JACKSON COUNTY—		
S. L. Brist, Shamrock.....	Robinson Creek	6,000
R. K. Frost, Millston.....	South Branch, Robinson Ck.	6,000
Fred Newell, Hixton.....	Pigeon Creek	6,000
W. E. Abbott, Hixton.....	Mason's Creek	6,000
W. G. Stolts, Taylor.....	Carpenter's Creek	6,000
	Iron Creek	3,000
	Pine Creek	3,000
Simon Knaggs, Hatfield.....	Nora Creek	6,000
F. Dudley, Alma Center.....	South Branch, Hall's Creek..	6,000
E. A. Miller, Hixton.....	N. and S. Branches, Trem-	
	pealeau River	6,000
		54,000

Distribution of Fish.

RAINBOW TROUT DISTRIBUTION, 1897—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
JUNEAU COUNTY—		
M. Leffingwell, Mauston.....	E. Brch., Crossman Creek....	6,000
C. P. Babcock, Mauston.....	Brewer's Creek	6,000
Jas. Roach, Mauston.....	One-mile Creek	6,000
John Scanlan, Lyndon.....	Lawrence Creek	6,000
A. D. Gill, New Lisbon.....	Fountain Creek	6,000
	Macomber Creek	3,000
	Little Lemonweir Creek.....	3,000
		36,000
LA CROSSE COUNTY—		
Thos. Barclay, West Salem.....	Flemming's Creek	6,000
A. C. Hanson, Mindora.....	Flemming's Creek	6,000
		12,000
LANGLADE COUNTY—		
John Veidt, Summit Lake.....	Hunting River	6,000
LINCOLN COUNTY—		
G. A. Miller, Dudley	Prairie River	6,000
A. L. Miller, Dudley.....	Prairie River	6,000
		12,000
MANITOWOC COUNTY—		
Lorenz Dippold, Mosel.....	Dippold's Pond	6,000
Julius Linstedt, Manitowoc.....	Devil River	6,000
		12,000
MARATHON COUNTY—		
W. D. Connor, Stratford.....	Big Eau Pleine River.....	6,000
Lincoln Brett, Hatley.....	Plover River	3,000
C. L. Wyatt, Hatley.....	Plover River	3,000
F. E. Wheeler, Hatley.....	Plover River	3,000
		15,000
MARINETTE COUNTY—		
L. E. Katzenstein, Milwaukee.....	Little Eagle River.....	6,000
John Ahle, Wausaukee.....	Shepard Creek	9,000
C. H. Quirnsorn, Pembine.....	North Brch., Pene-bon-won...	9,000
	South Brch., Pene-bon-won..	12,000
John Hoff, Wausaukee.....	Hoff's Creek	12,000
John Wood, Amberg.....	South Brch., Pike River.....	9,000
Wausaukee Club, Middle Inlet.....	Little Wausaukee River.....	12,000
	Rat River	9,000
John Donnelly, Athelstane.....	S. Brch. of Pike River.....	12,000
	Little S. Brch., Pike River..	15,000
Geo. W. Taylor, Marinette.....	Little Wausaukee River.....	12,000
	Big Wausaukee River.....	12,000
	S. Brch., Little Wausaukee..	9,000
		138,000
MARQUETTE COUNTY—		
Fred Pond, Westfield.....	Duck Creek and Mill Pond..	6,000
OCONTO COUNTY—		
W. H. Young, Oconto.....	Lindsey Brook and Tribs....	12,000
Chas. Hall, Oconto.....	Little River	12,000
	South Branch River	13,000
		42,000

4 Fish.

Distribution of Fish.

RAINBOW TROUT DISTRIBUTION, 1897—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
NEIDA COUNTY—		
E. S. Shepard, Rhinelander.....	Shepard's Brook	6,000
J. E. Wood & Co., Woodboro.....	Wood River	6,000
Clark & Lennon, Rhinelander.....	Spring Brook	6,000
Brown & Robbins Lbr. Co., Rhinelander	Popple River	6,000
Paul Browne, Rhinelander.....	Moon River	6,000
		30,000
PEPIN COUNTY—		
Wm. H. Smith, Eau Galle.....	Big and Little Missouri Cks.	6,000
W. H. Huntington, Durand.....	Porcupine Creek	6,000
	Ward Creek	3,000
	Bear Creek	6,000
J. W. Losey, La Crosse.....	Lost Creek	6,000
		27,000
PIERCE COUNTY—		
J. B. Jenson, Ellsworth.....	Isabelle Creek	6,000
John Peterson, Ellsworth.....	Lost Creek	6,000
Martin Olson, River Falls.....	Foster's Spring	6,000
G. E. Pratt, River Falls.....	Kinnickinnic River	6,000
E. H. Currie, River Falls.....	Kinnickinnic River	6,000
A. Combacher, Ellsworth.....	Rush River	6,000
J. A. Clough, Spring Valley.....	Lousey Creek	3,000
	Cady Creek	3,000
B. S. Burhyte, River Falls.....	Kinnickinnic River	6,000
C. E. Meacham, Prescott.....	Big River	6,000
		54,000
POLK COUNTY—		
S. M. DeGoller, Richardson.....	Beaver Brook	6,000
J. F. Snyder, Amery.....	Bull Brook	3,000
	Beaver Brook	3,000
		12,000
PORTAGE COUNTY—		
A. J. Anderson, Amherst.....	To-morrow River	6,000
Wm. T. Waller, Nelsonville.....	Trib., Waupaca River.....	6,000
John C. Frost, Stevens Point.....	Plover River	6,000
John Een, Amherst.....	South Brch., Waupaca River	6,000
J. N. Rambeck, Peru.....	Tribs., To-morrow River....	6,000
		30,000
PRICE COUNTY—		
Fred Myers, Prentice.....	Worcester's Lake	6,000
ST. CROIX COUNTY—		
Patrick Heefrod, New Richmond....	South Fork	6,000
Thos. Ward, New Richmond.....	Reed's Springs	6,000
L. G. Green, Hudson.....	Willow River	6,000
P. E. De Mille, Baldwin.....	Wood's Springs	6,000
S. S. Holmes, Baldwin.....	Barker Springs	6,000
F. F. Gray, Hudson.....	Jefferson Brook	6,000
B. Dean, Jewett.....	Pine Tree Springs	6,000
O. H. Gordon, Somerset.....	Apple River	6,000
Wm. Walsh, Cylon.....	Reebe Brook	6,000
L. J. Adgate, Cylon.....	Spring Creek	6,000
		60,000

Distribution of Fish.

RAINBOW TROUT DISTRIBUTION, 1897—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
SAUK COUNTY—		
F. Bueldar, Prairie du Sac.....	Little Baraboo	6,000
W. F. Conger, Prairie du Sac.....	Honey Creek	6,000
M. H. Keysar, Prairie du Sac.....	Honey Creek	6,000
F. J. Farr, Prairie du Sac.....	Leman's Creek	6,000
O. J. Tabor, Prairie du Sac.....	Laymond's Creek	6,000
		30,000
SHAWANO COUNTY—		
O. H. Kowalske, Regina.....	North Branch	6,000
Jas. K. Stewart, Hunting.....	N. Branch, Pigeon River.....	6,000
A. B. Glaubitz, Wittenberg.....	Embarrass River	6,000
		18,000
SHEBOYGAN COUNTY—		
B. H. Sanford, Sheboygan Falls.....	Head, Milwaukee River.....	6,000
Jas. Slyfield, Waldo.....	Head-waters, Onion River....	6,000
Jas. Mallman, Sheboygan.....	Tributary, Sheboygan River.	12,000
		24,000
TAYLOR COUNTY—		
J. B. Haugartz, Medford.....	Black River	6,000
T. G. Jeffers, Medford.....	Deltrich's Creek	3,000
	Mink Creek	3,000
		12,000
TREMPEALEAU COUNTY—		
E. J. Kidder, Whitehall.....	Hay Creek	6,000
Ole Larson, Whitehall.....	Irvine Creek	6,000
Ludvig Solsrud, Whitehall.....	Fitch Creek	6,000
P. L. Solberg, Whitehall.....	Jacob Creek	6,000
Iver Peterson, Ettrick.....	Pederson's Mill Pond.....	6,000
		30,000
VERNON COUNTY—		
Robert Hammer, Hillsboro.....	West Branch, Baraboo River And Tributaries	15,000
VILAS COUNTY—		
Finn Lawler, Eagle River.....	Spring Creek	3,000
	Churchill Brook	3,000
Ross Lumber Co., Arbor Vitae.....	Martin Creek	6,000
John Redcliffe, Eagle River.....	Spring Creek	6,000
H. Howlett, Conover.....	Head-waters, Tamarack Ck...	6,000
Dickenson & Cook, E. River.....	Cedar Creek	6,000
A. A. Denton, Eagle River.....	Musk-rat Creek	6,000
H. B. Chopin, Milwaukee.....	Clear Lake	6,000
N. A. Coleman, Eagle River.....	Kenluck Lake	6,000
Fred Morey, Eagle River.....	Silver Lake	6,000
Jos. Hughes, Eagle River.....	Deer Skin River.....	6,000
		60,000
WASHBURN COUNTY—		
Wm. Busch, Spooner	Yellow River	6,000
WAUKESHA COUNTY—		
Frank P. Ziegler, Milwaukee.....	DeNoon Lake	6,000

Distribution of Fish.

RAINBOW TROUT DISTRIBUTION, 1897—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
WAUPACA COUNTY—		
J. H. Coffman, Marion.....	Spring Brook	3,000
	Churchell Brook	3,000
Wm. Gould, Clintonville.....	Beaver Creek	6,000
Wm. Schimke, Clintonville.....	Spring Brook	3,000
Chas. Bucholz, Clintonville.....	Shaw Creek	3,000
Aug. Ahlyrinson, Pella.....	Main Embarrass	6,000
F. P. Jones, Clintonville.....	Pigeon Creek	3,000
L. E. Knudson, Clintonville.....	Mattison Creek	3,000
John D. Miller, Marion.....	North Brch., Pigeon River.....	3,000
J. T. Hickey, New London.....	Potter's Creek	3,000
	Boardman Creek	3,000
	Careen Creek	3,000
	Maple Creek	3,000
	Embarrass river	2,000
	Deer Creek	3,000
	Turrey's Pond	3,000
	Chinese Pond	3,000
Brooks and Root, Sheridan.....	Waupaca River	6,000
H. M. Olson, Sheridan.....	Nevin Creek	3,000
O. J. Olsson, Sheridan.....	Headland Creek	3,000
John Jobson, Sheridan.....	Silver Creek	3,000
W. B. Baker, Waupaca.....	Emma Creek	6,000
	Radley Creek	6,000
Frank Stout, Waupaca	South Brch., Little Wolf.....	12,000
	North Brch., Owl Creek.....	9,000
W. R. Parks, Iola.....	Tresness Creek	6,000
Ole C. Se...er, Scandinavia.....	Spaulding Creek	3,000
	Paulson Creek	3,000
	Jones' Creek	3,000
	Sether Creek	3,000
C. H. Anderson, Scandinavia.....	N. Brch., Little Wolf.....	6,000
L. M. Jackson, Manawa.....	N. Brch. of the South Brch. of Little Wolf River.....	6,000
F. Lindekugel, Manawa.....	North Brch., Waupaca River.....	6,000
		141,000
WAUSHARA COUNTY—		
C. A. Smart, Wild Rose.....	Clayton Creek	3,000
W. L. Wilson, Springwater.....	Pine River	3,000
		6,000
Total distribution for 1897.....		1,191,000

Distribution of Fish.

WALL-EYED PIKE DISTRIBUTION, 1897.

Name and Address of Applicant.	Where Planted.	No. of Fish.
BARRON COUNTY—		
E. K. Brayton, Rice Lake.....	Tuscobia Lake	200,000
I. F. Allen, Rice Lake.....	Tuscobia Lake	200,000
Frank Fiske, Turtle Lake.....	Big Horse-shoe Lake.....	200,000
Albert Rosenbush, Turtle Lake.....	Little Round Lake.....	200,000
F. C. Wickenburg, Turtle Lake.....	Echo Lake	200,000
F. W. Miller, Cumberland.....	Beaver Dam Lake.....	200,000
		1,200,000
BAYFIELD COUNTY—		
Rust Owen Lbr. Co., Drummond....	Long Lake	300,000
	Bass Lake	100,000
Currie G. Bell, Bayfield.....	Siskowit Lake	400,000
Frank Hammill, Cable.....	Bass Lake	200,000
C. P. Barker, Iron River.....	Iron Lake	200,000
H. R. Van Alstine, Iron River.....	Little Pine Lake.....	200,000
Hollon Richardson, Iron River.....	Lake (no name) near Iron R.	200,000
		1,600,000
CHIPPEWA COUNTY—		
P. S. Peterson, Bloomer.....	Bloomer Pond	200,000
E. H. Rodgers, Bloomer.....	Shaddock Lake	200,000
A. A. Korn, Jr., Stanley.....	Otter Lake	300,000
		700,000
CLARK COUNTY—		
John H. Chesak, Athens.....	Black Creek	300,000
COLUMBIA COUNTY—		
L. N. Coapman, Wyoceana.....	Duck Creek	300,000
DANE COUNTY—		
C. E. Shannon, Stoughton.....	Lake Kegonsa	300,000
T. C. Lund, Stoughton.....	Lake Kegonsa	300,000
Chris. Legried, London.....	Lake Ripley	300,000
		900,000
DOUGLAS COUNTY—		
August W. Kunert, Superior.....	Round Lake	200,000
A. G. Alscamp, Superior.....	Bardon Lake	100,000
	Bardon Slough	100,000
William Wegner, Superior.....	Lake Wegner	200,000
Jos. Roper, Superior.....	Bond Lake	200,000
John A. Bardon, Superior.....	Bardon Lake	200,000
Gordon Young, Gordon.....	Island Lakes	400,000
K. W. Lewis, Minong.....	Bass Lake	200,000
N. Lucius, Jr., Solon Springs.....	Upper St. Croix Lake	200,000
David Dobie, Minnesung.....	Minnesung Lake	200,000
		2,000,000
DUNN COUNTY—		
F. J. Basner, Wheeler.....	Hay River	300,000
F. S. Sherwood, Wheeler.....	Big Beohur Creek	300,000
D. C. Baldwin, Colfax.....	Red Cedar River.....	300,000
		900,000
EAU CLAIRE COUNTY—		
Marshall Cousins, Eau Claire.....	Washington Pond	400,000

Distribution of Fish.

WALL-EYED PIKE DISTRIBUTION, 1901—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
GREEN COUNTY—		
H. C. Putnam, Sr., Brodhead.....	Sugar River	300,000
William Roantree, Brodhead.....	Spring Creeks, Tributary to Sugar River	300,000
		600,000
JEFFERSON COUNTY—		
F. J. Fohljahn, Rome.....	Bark River	300,000
O. C. Vaughn, Jefferson.....	Lake Ripley	300,000
		600,000
JUNEAU COUNTY—		
Jas. Roach, Mauston.....	One-Mile Creek	300,000
Henry Schall, Mauston.....	Lemonweir River	300,000
H. C. Thompson, Mauston.....	Lemonweir River	300,000
		900,000
LA FAYETTE COUNTY—		
J. B. Simpson, Shullsburg.....	March Lake	300,000
M. P. Kennedy, Gratiot.....	Pecatonica River	300,000
R. P. Dougherty, Darlington.....	Pecatonica River	300,000
E. T. W. Barnes, Darlington.....	Pecatonica River	300,000
		1,200,000
LANGLADE COUNTY—		
C. L. Leykoin, Antigo.....	Moose Lake	300,000
John Veidt, Summit Lake.....	Summit Lake	300,000
M. G. Stickney, Antigo.....	Duck Lake	300,000
W. H. Dawley, Antigo.....	Kellogg's Pond	300,000
Elmer E. Thompson, Antigo.....	Thompson Lake	300,000
Geo. Bremer, Summit Lake.....	Summit Lake	300,000
		1,800,000
MARATHON COUNTY—		
Henry Seim, Wausau.....	Big Rib River	300,000
Ed. C. Hall, Jr., Wausau.....	Wisconsin River	300,000
		600,000
MILWAUKEE COUNTY—		
C. Niss, Milwaukee.....	Milwaukee River	600,000
MONROE COUNTY—		
T. O. Thorbus, Sparta.....	Paper Mill Pond.....	300,000
F. L. French, Sparta.....	Perch Lake	300,000
		600,000
POLK COUNTY—		
D. G. Jones, Clear Lake.....	Clear Lake	200,000
RACINE COUNTY—		
Shennan's Park Hotel, Burlington....	Brown's Lake	300,000
Waller & Gittings, Burlington.....	Brown's Lake	300,000
		600,000
ST. CROIX COUNTY—		
O. C. Van Meter, New Richmond.....	Willow River Pond	200,000
SAWYER COUNTY—		
William Hogue, Hayward.....	Round Lake	200,000
Har. Shue, Hayward.....	Round Lake	200,000
		400,000

Distribution of Fish.

WALL-EYED PIKE DISTRIBUTION, 1897—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
VILAS COUNTY—		
N. A. Coleman, Eagle River.....	Lake Emogene	150,000
	Kentuck Lake	150,000
A. E. McKinzie, Eagle River.....	Big Bass Lake.....	300,000
Matt. Herzel, Eagle River.....	Gordon Lake	300,000
W. H. Cannon, Madison.....	Lake Marguret	600,000
		1,500,000
WALWORTH COUNTY—		
Allen F. Caldwell, Whitewater.....	Green Lake	600,000
WASHBURN COUNTY—		
William Busch, Spooner.....	Mud Lake	200,000
Wm. Hellene, Spooner.....	Mud Lake	200,000
G. L. Jones, Snell Lake.....	Shell Lake	200,000
E. D. Baker, Shell Lake.....	Lake in Township 38, R. 11 (no name)	200,000
Geo. Tozer, Spooner.....	Little Mud Lake	200,000
O. H. Ingraham, Eau Claire.....	Long Lake	600,000
		1,600,000
WAUKESHA COUNTY—		
H. Bowman, Genesee.....	White Creek Lake	300,000
W. H. Fanner, Eagle.....	Husten's Lake	300,000
J. C. Schuette, Muskego Center.....	Muskego Lake	300,000
Frank P. Ziegler, Milwaukee.....	DeNoon Lake	600,000
L. Maschouser, Nashotah.....	Okauchee Lake	300,000
		1,800,000
WAUPACA COUNTY—		
Emor H. Lynch, Crystal Lake.....	Sand Lake	150,000
	Bass Lake	150,000
Philip A. Ham, Crystal Lake.....	Pine Lake	300,000
W. L. Wilson, Spring Water.....	Long Lake	150,000
	Pine Lake	150,000
Wm. Ruthford, Waupaca.....	Hunter's Creek	300,000
		1,200,000
Total distribution, 1897.....		23,300,000

Distribution of Fish.

BROOK TROUT DISTRIBUTION, 1898.

Name and Address of Applicant.	Where Planted.	No. of Fish.
ASHLAND COUNTY—		
Geo. P. Rossman, Ashland.....	Brunsweller Creek	6,000
Geo. Sell, Glidden.....	Magee Creek	6,000
A. A. Markl, Mellen.....	Oppgard Creek	3,000
John Pearl, Butternut.....	Burn's Creek	3,000
	Stocking Creek	3,000
C. F. Graf, Butternut.....	Pine Creek	3,000
	Butternut Creek	3,000
		27,000
BARRON COUNTY—		
G. E. Scott, Prairie Farm.....	Silver Creek	3,000
I. Sprague, Prairie Farm.....	Vaneer Creek	3,000
J. H. Bunker, Turtle Lake.....	Smith's Creek	5,000
A. Rosenbush, Turtle Lake.....	Beaver Brook	5,000
H. S. Comstock, Cumberland.....	Big Springs	5,000
W. H. Cleony, Cumberland.....	Deep Springs	5,000
P. J. Heintz, Rice Lake.....	Barker Creek	3,000
P. E. Olsen, Rice Lake.....	North Brch., Rock Creek.....	3,000
Chas. J. Beecher, Rice Lake.....	Cob Creek	3,000
A. A. Gabriel, Rice Lake.....	Rock Creek	3,000
Wm. Boehmer, Rice Lake.....	Hickey Creek	3,000
Geo. Andersen, Rice Lake.....	Barker's Creek	3,000
T. W. Bonn, Barron.....	Pine Creek	2,500
	Brown's Creek	2,500
R. A. Burton, Barron.....	Cranberry Creek	2,500
S. Christiansen, Barron.....	Quaderer's Creek	2,500
D. Post, Barron.....	Johnson Creek	2,500
D. A. Russell, Dallas.....	West Pine Creek	3,000
Torger Olson, Dallas.....	Stony Creek	3,000
Harry Halverson, Dallas.....	South Pine Creek	3,000
K. Espeseth, Dallas.....	East Pine Creek	3,000
		68,500
BAYFIELD COUNTY—		
Frank Hammill, Cable.....	Big Brook	5,000
C. G. Bell, Bayfield.....	Siskowit River	7,500
Nelson Brothers, Bayfield.....	Onion River	5,000
Wm. Knight, Bayfield.....	Ray's Creek	8,000
D. J. Estabrook, Washburn.....	Four Mile Creek	5,000
	Sioux River	5,000
Saml. Bally, Bayfield.....	Spring Brook	4,000
J. L. Sayles, Pratt.....	Eighteen-mile Creek	2,500
	Twenty-mile Creek	2,500
Iver Lien, Mason.....	Spring Brook	6,000
F. A. Bell, Iron River.....	Trout Brook	5,000
C. D. Ramsdell, Iron River.....	Ramsdell Brook	5,000
H. O. Lund, Iron River.....	East Flag River	2,500
	West Flag River	2,500
W. G. Bohn, Iron River.....	East Fork, Iron River.....	5,000
		70,500
BROWN COUNTY—		
Chas. J. Kimball, Green Bay.....	Beaver Dam Creek	3,000
Timothy Burke, Wayside.....	Branch River	6,000
J. L. Wilcox, Green Bay.....	Whipple Brook	6,000
Victor Bader, Green Bay.....	Shirland Creek	3,000
		18,000

Distribution of Fish.

BROOK TROUT DISTRIBUTION, 1898—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
BUFFALO COUNTY—		
S. D. Hubbard, Mondovi.....	Harvey Creek	3,000
	Carroll Creek	3,000
	Rossman Creek	3,000
	Paeso Creek	3,000
S. Gilman, Mondovi.....	Gilman Creek	3,000
Harvey Brown, Modena.....	Modena Valley Creek	3,000
J. W. Whelan, Mondovi.....	Holmes Creek	3,000
	Mill Creek	3,000
	Hoyt Creek	3,000
	Rossman Creek	3,000
		30,000
CHIPPEWA COUNTY—		
E. A. Martin, Cauott.....	Coon Creek	3,000
	Wild Cat Creek	3,000
R. H. Torford, Boyd.....	Hay Creek	3,000
	Hill's Creek	3,000
S. R. Kaiser, Cadott.....	Spring Creek	6,000
Snyder Brothers, Cook's Valley.....	Branch of Trout Creek.....	3,000
A. Detline, Bloomer.....	West Brch., O'Neil Creek.....	3,000
John Ellsworth, Bloomer.....	Chissman Creek	3,000
	Conroy Creek	2,500
P. H. Lindley, Chippewa Falls.....	Little Hay Creek.....	2,500
L. Vincent, Chippewa Falls.....	Big Hay Creek	2,500
O. C. Detloff, Chippewa Falls.....	Hanneman Creek	2,500
C. K. Erwin, Chippewa Falls.....	Silver Springs Brook.....	5,000
E. W. Hill, Appolonia.....	Mad Creek	5,000
		46,500
CLARK COUNTY—		
Peter Cattanach, Snow.....	Barker's Creek	6,000
V. U. Mason, Snow.....	Spring Creek	6,000
R. W. Balch, Neillsville.....	East Brch., Wedge's Creek.....	3,000
	Cawley Creek	3,000
G. R. Klopff, Neillsville.....	Pony Creek	6,000
Joseph Mack, Loyal.....	Alder Creek	3,000
	South Fork	3,000
Fred A. Nelson, Unity.....	Wheeler Creek	3,000
John Moore, Thorpe.....	Daly Creek	3,000
	Mead Creek	3,000
		39,000
COLUMBIA COUNTY—		
S. C. Cook, Portage.....	Maynard Creek	6,000
Dani. Bentley, Hartman.....	Rocky Run	6,000
		12,000
CRAWFORD COUNTY—		
J. P. Barnum, Prairie du Chien.....	Lane Brook	9,000
Aug. Kessler, Wauzeka.....	Grand Grey Creek.....	6,000
W. S. Manning, Soldiers' Grove.....	Johnson Creek	3,000
	Trout Creek	3,000
J. O. Davidson, Soldiers' Grove.....	Soldiers' Grove Creek.....	6,000
	Knapp's Creek	3,000
Tim Garrity, Soldiers' Grove.....	Bear Creek	6,000
M. Hendrickson, Soldiers' Grove.....	Johnson Creek	3,000
		39,000
DANE COUNTY—		
Jos. Henderson, Rileys.....	Henderson Creek	6,000
Henry Boning, Bascoe.....	Trib., Sugar River.....	6,000
Frank Prucia, Bellville.....	Big Creek	6,000
C. M. Clarke, Stoughton.....	Tribs., Bad-fish Creek.....	6,000
		24,000

Distribution of Fish.

BROOK TROUT DISTRIBUTION, 1898—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
DODGE COUNTY—		
Eugene Ziegler, Mayville.....	Koepsell Creek	3,000
	Decker's Creek	3,000
		6,000
DOUGLAS COUNTY—		
E. J. Favell, West Superior.....	Goose Creek	3,000
	Copper Creek	3,000
N. Lucius, Jr., Solon Springs.....	Brule River	6,000
J. Bergin, Gordon.....	Spring Brook	6,000
W. J. Conness, Brule.....	Little Brule River.....	5,000
		23,000
DUNN COUNTY—		
E. B. Jackson, Prairie Farm.....	Dougherty Creek	3,000
Robt. R. Porter, Wheeler.....	Big Otter Creek.....	3,000
Hans M. Olsen, Colfax.....	S. Brch., Eighteen-Mile Creek	6,000
L. A. Larson, Colfax.....	N. Brch., Eighteen-mile Creek	3,000
H. O. Peterson, Colfax.....	S. Brch., Eighteen-Mile Creek	3,000
B. Tollefson, Colfax.....	Beaver Creek	3,000
W. H. Allen, Menomonie.....	Varney Creek	3,000
L. Ingraham, Menomonie.....	Hall Creek	3,000
F. B. Wilson, Menomonie.....	Irvine Creek	3,000
E. J. Newsome, Menomonie.....	Irvine Creek	3,000
Chas. Ingraham, Menomonie.....	Gilbert Creek	3,000
W. A. Scanlan, Menomonie.....	Elk Creek	3,000
J. H. Stout, Menomonie.....	Little Elk Creek.....	6,000
		48,000
EAU CLAIRE COUNTY—		
William J. Star, Eau Claire.....	Various spring creeks near Eau Claire	12,500
B. A. Buffington, Eau Claire.....	Elk Creek	3,000
	Lowes Creek	3,000
A. A. Cutter, Eau Claire.....	Beaver Creek	3,000
B. S. Phillips, Eau Claire.....	Eighteen-mile Creek	3,000
Marshall Cousins, Eau Claire.....	Loose Creek	3,000
	Cooks Creek	3,000
Geo. W. Pond, Eau Claire.....	Otter Creek	3,000
Herman Lange, Eau Claire.....	Coon Creek	3,000
Henry Russell, Augusta.....	Bridge Creek	6,000
G. E. Bartz, Fall Creek.....	Beaver Creek	6,000
		48,500
FOND DU LAC COUNTY—		
John Armen, Fond du Lac.....	Empire Creek	3,000
J. J. Gromme, Fond du Lac.....	Forest Brook	3,000
H. W. Geisse, Fond du Lac.....	Mullett River	3,000
O. F. Jaeger, Fond du Lac.....	Willow Creek	3,000
C. F. Schleger, Fond du Lac.....	Spring Brook	3,000
Paul J. Fritz, Fond du Lac.....	Parson Creek	3,000
Saml. H. Longdin, Fond du Lac.....	Fisher Creek	3,000
W. R. Fricenstein, Fond du Lac.....	Andersen's Creek	3,000
Chas. F. Geisse, Fond du Lac.....	Tributary, Milwaukee River..	3,000
L. E. Reed, Ripon.....	Ray Creek	3,000
E. J. Burnside, Ripon.....	Silver Creek	3,000
H. P. Cody, Ripon.....	Long's Creek	3,000
E. F. Reichmott, Ripon.....	Snake Creek	3,000
T. S. Chittenden, Ripon.....	Martin Creek	3,000
W. T. Runnals, Ripon.....	Silver Creek	3,000
C. W. Stewart, Ripon.....	Saul's Creek	3,000
L. W. Thayer, Ripon.....	Henderson Creek	6,000
H. C. Eversz, Ripon.....	Saul's Creek	3,000
Robt. Denz, Elmore.....	Denz Spring Brook	3,000
Wm. Wedde, New Cassel.....	Hawkins Creek	3,000
G. Van du Grinten, New Cassell.....	McCullough's Creek	3,000
		66,000

Distribution of Fish.

BROOK TROUT DISTRIBUTION, 1898—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
GRANT COUNTY—		
W. G. Palmer, Boscobel.....	Seeley Creek	3,000
W. J. F. Nauert, Boscobel	Crooked Creek	3,000
Chas. Wolf, Boscobel	Saunders Creek	3,000
Jud. P. Walker, Boscobel	Hungerford's Creek	3,000
B. T. Williams, Boscobel	Basey Creek	3,000
G. D. Walker, Boscobel	Chitwood Creek	3,000
T. R. Cheeseboro, Boscobel	Indian Creek	3,000
A. J. Howell, Lancaster.....	Borah Branch	6,000
S. E. Hassel, Lancaster.....	Chubb Branch	6,000
H. A. Davis, Mountfort.....	Tributaries to Blue River.....	6,000
Frank W. Cheesebro, Muscoda.....	Branch of Coon Creek.....	3,000
L. C. McCullum, Muscoda.....	Ludwig Branch	3,000
O. W. Fessel, Muscoda.....	Coon Creek	3,000
G. A. Elliot, Muscoda.....	Hoosier Creek	3,000
Chas. McMillan, Boscobel.....	West Brch., Coon Creek.....	3,000
R. S. Olmstead, Woodman.....	Little Greene	3,000
		57,000
GREEN COUNTY—		
W. W. Chadwick, Monroe	Tributary of Sugar River....	6,000
O. E. Stamm, New Glarus.....	Trib., Sugar River	3,000
	Trib., Pecatonica River.....	3,000
		12,000
GREEN LAKE COUNTY—		
Geo. W. Morton, Berlin	Waterman Creek	6,000
Fred W. Stewart, Berlin	Willow Creek	3,000
William Stewart, Berlin	Willow Creek	3,000
		12,000
IOWA COUNTY—		
John Burris, Clyde.....	Burris Branch	3,000
Julia Bennett, Pine Knob.....	Trib., Otter Creek	3,000
Wm. Kramer, Jonesdale	Spring Branch	3,000
H. R. Carter, Jonesdale.....	Tobin Creek	3,000
	Weir Creek	3,000
Thomas Thomas, Dodgeville	Head of Pecatonica River....	6,000
Frank F. Starry, Barneveld.....	Walnut-hollow Creek	3,000
	Mill Creek	3,000
Fred Jewell, Dodgeville	Head of Pecatonica River	6,000
Saml. W. Reese, Dodgeville.....	Regan Creek	3,000
	Runker Creek	3,000
	Snead Creek.....	3,000
	Harker Creek	3,000
	Henstock's Springs	6,000
J. T. Paull, Ridgeway.....	Rock Branch	3,000
Geo. H. Mausten, Mineral Point.....	Verning Creek	3,000
W. H. Priedeaux, Mineral Point.....	Grabber Creek	3,000
A. Apple, Mineral Point	Synche Creek	3,000
J. M. Mulhairn, Mineral Point.....	Berg Creek	3,000
Geo. D. Masten, Mineral Point.....	Pecatonica River	6,000
J. C. Kirkpatrick, Rewey.....		
		72,000
IRON COUNTY—		
Frank Grant, Curry.....	Potatoe River	12,000
JACKSON COUNTY—		
A. J. Patterson, North Bend.....	Langston Creek	3,000
	Mill Creek	3,000
S. L. Brist, Shamrock.....	Trout Creek	3,000
	Stony Creek	3,000

Distribution of Fish.

BROOK TROUT DISTRIBUTION, 1898—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
JACKSON COUNTY—Continued.		
F. Johnson, Black River Falls.....	Squaw Creek	3,000
	Vincent Creek	3,000
R. D. Squires, Black River Falls.....	Squaw Creek	3,000
	Snow Creek	3,000
	Allen's Creek	3,000
B. H. Bight, Black River Falls.....	Pisno Creek	3,000
Chas. Sechler, Sechlerville.....	Sechlerville Brook	6,000
J. B. Miller, Alma Center	Judkins Creek	6,000
E. E. Moore, Merrilan	Bisno Creek	3,000
	Hall Creek	3,000
E. B. Sanders, Merrilan	Pigeon Creek	3,000
	Bovee Creek	3,000
Geo. W. Purnell, Merrilan.....	Hall Creek	3,000
	Crombie Creek	3,000
H. J. Ornsby, Black R. Falls.....	Trout Run	6,000
	Kenyon Creek	3,000
	Spring Creek	3,000
		72,000
JEFFERSON COUNTY—		
L. H. Washburne, Palmyra.....	Aurelin Creek	6,000
E. R. Trippe, Palmyra.....	Spring Creek	3,000
		9,000
JUNEAU COUNTY—		
John Conway, Elroy	Millers Creek	3,000
	Prairie Creek	3,000
Henry Schall, Mauston	Bremer Creek	6,000
Geo. Eakins, Lyndon	Lyndon Creek	3,000
	Weber Creek	3,000
A. D. Gill, New Lisbon.....	Macomber Creek	3,000
	Kenney Creek	3,000
F. E. Hurd, New Lisbon	Macomber Creek	3,000
	Fountain Creek	6,000
	Houghton Creek	3,000
C. E. Babcock, Necedah.....	Johnson Creek	3,000
F. M. Reed, Necedah.....	Scoonover Creek	3,000
E. D. Bartholomew, Necedah.....	North Creek	3,000
W. A. Reed, Necedah.....	Dead-horse Creek	3,000
A. H. Matxon, Necedah.....	Spring Creek	3,000
J. E. Daly, Necedah.....	Wris Creek	3,000
		54,000
LA CROSSE COUNTY—		
John Markl, La Crosse.....	Mormon Cooley Creek	6,000
Buttles & Pierce, Onalaska.....	Half-way Creek	3,000
	Sand Lake Cooley Creek	3,000
John Erickson, Bangor	Fish Creek	6,000
Frank Bradley, Bangor.....	Burns Creek	3,000
Wm. Smith, Bangor	Dutch Creek	3,000
Thos. Barclay, West Salem.....	McConnell Creek	3,000
	Brown's Creek	3,000
	Flemming Creek	3,000
Jas. J. Hogan, La Crosse	Fishback Creek	6,000
Alex. Johnson, West Salem	Erickson Creek	3,000
	Mikkelson Creek	3,000
	Thompson Creek	3,000
	McElowney Creek	3,000
	Luce Creek	3,000
Jas. McCord, La Crosse	Krall Creek	6,000
	La Crosse Creek	6,000

Distribution of Fish.

BROOK TROUT DISTRIBUTION, 1898—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
LA CROSSE COUNTY—Continued.		
A. Hirschheimer, La Crosse	Krall Creek	6,000
	North Brch., Coon Creek.....	6,000
	Chis Creek	3,000
W. J. Scott, Madison	Brown's Creek	3,000
	McKidowney Creek	3,000
	Jones Creek	3,000
		90,000
LA FAYETTE COUNTY—		
W. E. Robinson, Blanchardville.....	Gunstid Creek.	3,000
Jas. Blanchard, Blanchardville.....	Cowell Creek	3,000
E. Schoruhart, Gratiot	Gillis Creek	3,000
	Wolf Creek	3,000
M. P. Kennedy, Gratiot.....	Gallagher's Creek	3,000
	Wolf Creek	3,000
Michael Derrick, Fayette.....	Derrick Branch	3,000
	Finley Branch	3,000
E. W. Smith, Darlington.....	Otter Creek	6,000
		30,000
LANGLADE COUNTY—		
C. W. Maney, Elcho.....	Spring Brook	6,000
John Veldt, Summit Lake.....	Hunting River	6,000
Jos. Shacher, Pearson	Steven's Creek	6,000
W. H. Hogan, Antigo.....	Spring Brook	6,000
		24,000
LINCOLN COUNTY—		
Henry Dudley, Merrill	Prairie River	6,000
W. H. Flett, Merrill.....	Tomahawk River, above Dam	3,000
	Squaw Creek	3,000
	Spirit River	3,000
	Hay-meadow Creek	3,000
Howen & Fleming, Tomahawk....	Brch., Little Rice Creek.....	3,000
Rufus Manson, Tomahawk.....	Scanawon Creek	3,000
John P. Hugues, Tomahawk.....	Tomahawk River, above Dam	3,000
	Squaw Creek	3,000
	Spirit River	3,000
	Hay-meadow Creek	3,000
		36,000
MARATHON COUNTY—		
David Winton, Wausau.....	Winton Creek	3,000
Fred Genrich, Wausau.....	Eau Claire River	3,000
J. M. Smirh, Wausau.....	Little Rib River	3,000
Franklin Bonny, Wausau.....	Sandy Creek	3,000
Chas. Winton, Wausau	Plover River	3,000
John Miller, Wausau	Mow Brook	3,000
Neal Brown	Plover River	6,000
G. E. Vandercook, Madison.....	Little Eau Pleine River.....	6,000
Robt. T. Freeman, Mosinee.....	Freeman Creek	3,000
W. N. Daniels, Mosinee.....	Freeman Creek	3,000
Tom R. Guenther, Knowiton.....	Four-mile Creek	6,000
		42,000
MARINETTE COUNTY—		
H. S. Clute, Marinette.....	Middle Inlet	6,000
John Huff, Wausaukee.....	Wausaukee River	6,000
C. H. Quirslohn, Pembine.....	Pembinee River	6,000
John Wood, Amberg	Pike River	6,000
W. A. Brown, Marinette.....	Muckaria River	6,000
	Hand-saw Creek	3,000
Geo. W. Taylor, Marinette.....	Thunder River	6,000
		42,000

Distribution of Fish.

BROOK TROUT DISTRIBUTION, 1898—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
MARQUETTE COUNTY—		
Thos. Wells, Jr., Neshkoro.....	White River	6,000
A. H. Scobie, Neshkoro.....	Little Lunch Creek	3,000
	White River, above Dam.....	3,000
Oscar J. Weiss, Westfield.....	Head of Duck Creek.....	3,000
Frank Ogle, Westfield.....	Pinkerton Creek	3,000
William Guderjahn, Liberty Bluff.....	Chaffee Creek	6,000
		24,000
MONROE COUNTY—		
Fred Gross, Sparta.....	Sparta Creek	3,000
	Tarr Creek	3,000
Paul Schaller, Sparta.....	Squaw Creek	3,000
	Ash Run	3,000
Jacob Snyder, Sparta.....	Brackett Creek	3,000
Burton & Graves, Sparta.....	Beaver Creek	3,000
D. C. Hope, Sparta.....	Silver Creek	3,000
	Swamp Creek	3,000
F. L. French, Sparta.....	Bailey Creek	3,000
	Sargent Creek	3,000
Victor Mistle, Camp Douglas.....	Indian Creek	6,000
A. L. Halstead, Warrens.....	Whiskey Creek	3,000
Melvin Lawton, Warrens.....	Rudd Creek	3,000
S. I. Dale, Warrens.....	Burr Creek	3,000
W. L. Howes, Tomah.....	Flora Creek	3,000
	Sparta Creek	3,000
	Ash Creek	3,000
	Squaw Creek	3,000
	Little Silver Creek	3,000
	Cales Creek	3,000
	Big Silver Creek	3,000
	Tarr Creek	3,000
Saml. Sloggy, Ontario.....	Brush Creek	3,000
	Cook Creek	3,000
	Billings' Creek	3,000
	Weister Creek	3,000
		81,000
ONEIDA COUNTY—		
A. W. Shelton, Rhinelanders.....	Schnrb's Creek	3,000
	Nosing Creek	3,000
John Davelin, Pratt Junction.....	Spring Brook	6,000
C. C. Yawkey, Hazlehurst.....	Kitty Creek	6,000
		18,000
PEPIN COUNTY—		
Aug. Thies, Pepin.....	Elk Creek	6,000
O. G. Potter, Pepin.....	Roaring River	6,000
N. A. Keyes, Durand.....	Crystal Creek	3,000
W. H. Huntington, Durand.....	Big Arkansaw	2,500
W. H. Huntington, Durand.....	Little Arkansaw Creek.....	2,500
	Porcupine Creek	2,500
	Plum Creek	2,500
H. Pattison, Tarrant.....	South Fork Bear Creek.....	3,000
		28,000
PIERCE COUNTY—		
W. C. Condit, Rock Elm.....	Big Missouri Creek	3,000
E. R. Condit, Rock Elm.....	Cave Creek	3,000
A. O. Belfanz, Rock Elm.....	Plum Creek	3,000
John Muller, Rock Elm.....	Plum Creek	3,000
John F. Davis, Brassington.....	Spring Rivulet	3,000

Distribution of Fish.

BROOK TROUT DISTRIBUTION, 1898—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
PIERCE COUNTY—Continued.		
J. A. Clough, Spring Valley.....	Lucy Creek	3,000
H. D. Burghardt, Spring Valley.....	Trib., Eau Galle River.....	6,000
E. Holcomb, Spring Valley.....	French Creek	3,000
J. M. Curtiss, River Falls.....	Kinnickinnic River	3,000
R. M. Briggs, River Falls.....	South Fork	3,000
G. E. Pratt, River Falls.....	Kinnickinnic River	5,000
E. H. Currie, River Falls.....	North Fork, Kinnickinnic....	3,000
Martin Olson, River Falls.....	Forter Springs	2,500
	East Branch	2,500
E. H. Lagerstedt, River Falls.....	Fuller Creek	3,000
H. G. Eklund, Moeville.....	Trimbelle River	2,500
	Isabelle Creek	2,500
C. W. Bateman, Ellsworth.....	Cave Creek	3,000
A. Combacher, Ellsworth.....	Rush River	3,000
		60,000
POLK COUNTY—		
C. S. Rimpert, Osceola Mills.....	Osceola Creek	5,000
John Howe, Amery.....	Spring Creek	5,000
		10,000
PORTAGE COUNTY—		
P. N. Peterson, Amherst.....	Peterson Creek	3,000
A. J. Anderson, Amherst.....	To-morrow River	6,000
Wm. S. Diver, Nelsonville.....	Trib., Waupaca River	3,000
John C. Frost, Stevens Point.....	Large Plover River.....	6,000
Wm. H. Cutting, Stevens Point.....	Little Plover	6,000
		24,000
PRICE COUNTY—		
W. F. Turner, Park Falls.....	Turner Springs	3,000
	Gardner Creek	3,000
Hugh Boyd, Fifield.....	Pelican Lake	6,000
		12,000
RICHLAND COUNTY—		
J. L. Hodson, Lone Rock.....	Norwegon Creek	3,000
A. J. Dickerson, Lone Rock.....	Sullivan Creek	3,000
	Lost Hollow Creek.....	3,000
H. W. Haskell, Sr., Lone Rock.....	Earl Creek	3,000
	Symonson Creek	3,000
Grant L. Miner, Richland Center....	Paule Creek	3,000
Chas. B. Cornwall, Richland Center....	Mill Creek	3,000
W. I. Griffin, Richland Center.....	Cherry Valley Creek	3,000
M. S. Bowler, Richland Center.....	Willow Creek	6,000
Frank Bowen, Richland Center.....	Melanchion Creek	3,000
W. H. Devoe, Richland Center.....	Hawkin's Creek	3,000
L. Baraber, Viola.....	Camp Creek	3,000
J. H. Frazier, Viola.....	Ruffon Creek	3,000
	Huffman Creek	3,000
V. P. Clark, Viola.....	Simmons' Creek	3,000
		48,000
ST. CROIX COUNTY—		
T. J. Lee, Cylon.....	Hay Creek	3,000
S. L. Pickett, Wilson.....	Wilson Creek	2,500
	Gilbert Creek	2,500
J. C. Daniels, Brookville.....	Eau Galle River.....	5,000
J. E. Jones, Hudson.....	Willow River	5,000
L. G. Greene, Hudson.....	Willow River	5,000
O. J. Williams, New Richmond.....	Ten-mile Creek	5,000
		28,000

Distribution of Fish.

BROOK TROUT DISTRIBUTION, 1898—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
SAUK COUNTY—		
A. M. Reynolds, Reedsburg.....	Powers' Brook	3,000
A. Coleman, Reedsburg.....	Bell Creek	3,000
Herman Foss, Reedsburg.....	Dell Creek	3,000
H. Scherve, Reedsburg.....	Copper Creek	3,000
H. C. Hunt, Reedsburg.....	Twin Creek	6,000
R. M. Mathews, Ironton.....	Furnace Creek	3,000
		21,000
SAWYER COUNTY—		
Harry Shue, Hayward.....		5,000
SHAWANO COUNTY—		
F. R. Schneider, Regina.....	Silver Creek	3,000
H. F. Jahne, Regina.....	Brch. of West Embarrass....	3,000
E. J. McLean, Mattoon.....	West Brch., Red River.....	6,000
		12,000
SHEBOYGAN COUNTY—		
H. H. Eberhardt, Plymouth.....	Mullet River	6,000
Peter Martch, Scott.....	North Brch., Milwaukee River	6,000
E. B. Robinson, Waldo.....	Head-waters, Milwaukee Riv.	6,000
B. H. Sanford, Sheboygan Falls.....	Head, Milwaukee River	12,000
		30,000
TREMPEALEAU COUNTY—		
O. O. Dahl, Whitehall.....	Johnson Cooley	3,000
Jas. P. Mallory, Whitehall.....	Michel's Creek	3,000
W. S. Kidder, Whitehall.....	Johnson Cooley	6,000
C. H. Cook, Look Out.....	Cook's Creek	6,000
Geo. Kindschi, Montana.....	Holmes' Creek	3,000
	Montana Creek	3,000
H. L. Ekern, Whitehall.....	Fly Creek	3,000
	Elk Creek	3,000
M. C. Whipple, Eleva	Big Creek	6,000
E. A. Oleson, Osseo.....	King Creek	3,000
F. G. Davis, Galesville.....	French Creek	3,000
	Hardie's Creek	3,000
	Tamarack Creek	3,000
	Silver Creek	3,000
		51,000
VERNON COUNTY—		
H. A. Lombard, La Farge.....	Trib., Bear Creek	6,000
Ole Fredrickson, Westby.....	Timber Creek	3,000
Albert Corry, Viroqua.....	Bishop Branch	3,000
Jos. Boehrer, Viroqua.....	Sadie Branch	3,000
Anton Metby, Westby.....	Thiemeher Creek	3,000
Olef Roer, Westby.....	Upper Spring Creek	3,000
E. W. Hazen, Viroqua.....	Coe Branch	3,000
	Honaker Branch	3,000
J. K. Schriener, Westby.....	Spring Cooley Creek	3,000
Gus. Morterud, Bloomingdale.....	Tributary, West Brch., of	
	Kickapoo River	6,000
Carl O'Brye, Westby.....	Coon Creek	6,000
John E. Casson, Viroqua.....		6,000
Robert Hammer, Hillsboro.....	West Brch., Baraboo River	
	and Tributaries	12,000
		60,000

Distribution of Fish.

BROOK TROUT DISTRIBUTION, 1898—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
VILAS COUNTY—		
Bent Brothers, State Line.....	Trout Creek	6,000
A. McKenzie, Eagle River.....	Deer-skin Creek	6,000
Albert Boutilie, Woodruff.....	South Brch., Manitowish Riv.	6,000
Jesse Coon, Woodruff.....	Turtle Waters	6,000
D. H. Sargent, Conover.....	Sargent Creek	6,000
John Radcane, Eagle River.....	Tribunary of Eagle River.....	6,000
John Green, Eagle River.....	Hay-meadow Creek	6,000
Henry Howlett, Conover.....	Buckatabon Creek	42,000
W. H. Cannon, Madison.....	Spring Branch	6,000
John W. Sutton, Minocqua.....	Spring Brook	6,000
Peter Stein, Star Lake.....	Big Bauckatebew	3,000
Salsich & Wilson, Star Lake.....	Manitowish River	3,000
	Lost Creek	3,000
Geo. O. Tupper, Star Lake.....	Johnson Creek	3,000
D. B. Harvison, Star Lake.....	Trout Creek	3,000
C. R. Beecher, Star Lake.....	Kitty Creek	3,000
		78,000
WALWORTH COUNTY—		
H. L. Halverson, Whitewater.....	Springer Creek	3,000
	Pollock Creek	3,000
C. B. Alrick, Whitewater.....	Bluff Creek	3,000
	Gould Creek	3,000
H. M. Trippe, Whitewater.....	Big-spring Creek	3,000
	Tiger Creek	3,000
Ed. Engleretsend, Whitewater.....	Brodway Creek	3,000
	Whitewater-Lake Creek	3,000
Chas. S. Weeks, Whitewater.....	Island Creek	3,000
	Territorial Creek	3,000
		30,000
WASHBURN COUNTY—		
W. M. Kellene, Spooner.....	Beaver Brook	3,000
C. W. Haskins, Spooner.....	Mud Brook	3,000
		6,000
WASHINGTON COUNTY—		
K. E. Klough, Rugby Junction.....	South Brch., Cedar Creek.....	6,000
	North Brch., Cedar Creek.....	3,000
Henry Menger, Wayne.....	Wayne Creek	3,000
S. F. Mayer, West Bend.....	Gunther's Creek	6,000
		18,000
WAUKESHA COUNTY—		
Henry Bowman, Genesee.....	White Creek	6,000
A. T. Stebbins, Eagle.....	Jericho Creek	3,000
John Pfeister, Elm Grove.....	Spring Brook	6,000
Harry Dreyer, Waukesha.....	Jericho Creek	3,000
	Genesee Creek	3,000
Irving F. Staps, Hartland.....	Bark River	6,000
C. W. Frazer, Menomonie Falls.....	Menomonie River	6,000
		33,000
WAUPACA COUNTY—		
E. P. Jones, Clintonville.....	North Pigeon River	3,000
J. E. Lehr, Clintonville.....	Spring Brook	3,000
P. Stimson, Clintonville.....	Hyde Creek	3,000
Geo. Sutherland, Clintonville.....	Brch., Wolf River.....	6,000
John D. Miller, Marion.....	North Brch., Pigeon River.....	6,000
W. B. Jeffers, Sheridan.....	Tributaries, Waupaca River.....	6,000
J. F. Jardine, Waupaca.....	Ogdensburg Creek	3,000
	Lynd Creek	3,000
		33,000

Distribution of Fish.

BROOK TROUT DISTRIBUTION, 1898—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
WAUSHARA COUNTY—		
M. A. Fuller, Hancock.....	Little Roch-a-cris	3,000
G. N. Spaulding, Hancock.....	Mecan River	3,000
H. F. Bartz, Coloma Station.....	Wandrey Creek	3,000
L. F. Bishop, Coloma Station.....	Runnels' Creek	3,000
Lewie Smith, Coloma Station.....	Hesler Creek	3,000
G. S. Sherman, Coloma Station.....	Squires' Creek	3,000
J. R. McLaughlin, Coloma Station...	Big Roch-a-cris	3,000
Jas. T. Ellarson, Wautoma.....	White River and Tributaries	12,000
W. A. Bugh, Wautoma.....	Mecan River	6,000
D. Hoxie, Wautoma.....	Tributaries of Mecan River..	6,000
W. L. Roberts, Wautoma.....	Lunch Creek	6,000
		51,000
WOOD COUNTY—		
E. A. Benson, Vesper.....	Hemlock Creek	6,000
L. M. Nash, Centralia.....	Chester Creek	3,000
	Mill Creek	3,000
		12,000
Total distribution, 1898.....		1,903,000

Distribution of Fish.

RAINBOW TROUT DISTRIBUTION, 1898.

Name and Address of Applicant.	Where Planted.	No. of Fish.
ADAMS COUNTY—		
W. H. Atcherson, Friendship.....	Big Roch-a-cris Creek.....	5,000
C. M. Simons, Friendship.....	Johnson Creek.....	2,500
L. Knight, Arkdale.....	Bay Brook Springs.....	2,500
A. M. Glorweigan, Friendship.....	Dead-horse Creek.....	2,500
S. W. Pierce, Friendship.....	Roch-a-cris Creek.....	5,000
	Little Roch-a-cris.....	2,500
	Cool Creek.....	2,500
		22,500
ASHLAND COUNTY—		
E. B. Gordon, Glidden.....	North Fork, Chippewa River.....	5,000
Nohl and Yankee, Ashland.....	Little Butternut Creek.....	5,000
C. F. Graf, Butternut.....	Spille Creek.....	2,500
	Richter Creek.....	2,500
John J. Hayden, Butternut.....	Wartgow Lake.....	5,000
Hugo Schmitt, Glidden.....	East Fork, Chippewa River.....	5,000
Geo. Sell, Glidden.....	Lake (no name) in Sec. 24— 24—3 W.	5,000
		30,000
BARRON COUNTY—		
J. E. Horsman, Rice Lake.....	Silver Creek.....	5,000
D. A. Russell, Dallas.....	Sioux Creek.....	5,000
T. W. Borum, Barron.....	Hay River.....	5,000
C. C. Coe, Barron.....	Miller's Creek.....	5,000
		20,000
CALUMET COUNTY—		
Anton Groschel, Charlesburg.....	Groschel's Springs.....	5,000
CHIPPEWA COUNTY—		
E. H. Rodgers, Bloomer.....	Marstin Creek.....	2,500
	Gunn Creek.....	2,500
E. A. Martin, Cadott.....	Paint Creek.....	5,000
S. R. Kaiser, Cadott.....	Arkwrighte Creek.....	5,000
		15,000
CLARK COUNTY—		
Fred Klopf, Neillsville.....	East Brch., Wage's Creek....	2,500
R. W. Balch, Neillsville.....	Pauly Creek.....	2,500
	Jack Creek.....	2,500
Ernest Barth, Snow.....	North Branch.....	5,000
G. R. Klopf, Neillsville.....	Cawley Creek.....	5,000
G. I. Oatman, Chili.....	Wheelock Creek.....	5,000
John Stewart, Greenwood.....	Rock Creek.....	5,000
N. E. Denny, Abbottsford.....	Big Eau Pleine River.....	5,000
		32,500
CRAWFORD COUNTY—		
C. A. Hoffman, Bell Center.....	Turning Branch.....	5,000
T. J. Lewis, Bell Center.....	Curley Creek.....	5,000
F. Brightman, Bell Center.....	Hall Branch.....	5,000
J. A. Hays, Gays Mills.....	Bacon Creek.....	2,500
	Copper Creek.....	2,500
J. O. Davidson, Soldiers' Grove.....	Soldiers' Grove Creek.....	5,000
	Knapp Creek.....	5,000
Tim Garrity, Soldiers' Grove.....	Bear Creek.....	2,500
	Johnson Creek.....	2,500
		35,000

Distribution of Fish.

RAINBOW TROUT DISTRIBUTION, 1898—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
DANE COUNTY—		
Albert Johnson, Black Earth.....	Big Spring Creek.....	2,500
Geo. Thatcher, Black Earth.....	Olman's Creek	5,000
T. J. Hughes, Black Earth.....	Erle Creek	5,000
M. D. Perkins, Bellville.....	Milem Creek	5,000
	Lyle Creek	2,500
	Howe Creek	2,500
	Stony-town Creek	5,000
		27,500
DOUGLAS COUNTY—		
N. Lucius, Jr., Solon Springs.....	Brule River	5,000
E. J. Favell, West Superior.....	Copper Creek	5,000
William J. Conness, Brule.....	Sandy Run	15,000
M. P. Nugent, Brule.....	Lucy Run	17,500
C. T. Campbell, Brule.....	Little Brule River	17,500
		60,000
DUNN COUNTY—		
Ole Thompson, Menomonie	Thorn Creek	2,500
	Thompson Creek	2,500
I. Sprague, Wheeler.....	Doohey Creek	5,000
		10,000
		20,000
EAU CLAIRE—		
Martin Stang, Eau Claire.....	Rock Creek	5,000
Marshall Cousins, Eau Claire.....	Elk Creek	5,000
A. A. Cutter, Eau Claire.....	Otter Creek	5,000
B. S. Phillips, Eau Claire.....	Coon Creek	5,000
FLORENCE COUNTY—		
J. T. Milks, Florence.....	La Montague Creek	5,000
S. T. Beattie, Florence.....	La Page Creek	2,500
	La Montaign Creek	2,500
Jas. Pontbriand, Florence.....	Fisher Creek	5,000
C. O. Allen, Florence.....	Pine River and Tributaries...	5,000
W. W. Noyes, Florence	Boot-Lake Creek	5,000
		25,000
Harvey Durand, Fond du Lac.....	Empire Brook	2,500
	Byron Brook	2,500
Chas. F. Geisse, Fond du Lac.....	Head, Milwaukee River	2,500
J. J. Gromme, Fond du Lac.....	Forest Brook	2,500
H. W. Geisse, Fond du Lac.....	Mullett River	2,500
Paul J. Fritz, Fond du Lac.....	Parson's Creek	2,500
Saml. H. Longdin, Fond du Lac.....	Anderson Creek	2,500
		17,500
GRANT COUNTY—		
L. C. McCollum, Muscoda.....	Van Elstyas Creek	5,000
Dighton Waite, Muscoda	Miles Creek	5,000
John Stransky, Muscoda	Saw Branch	5,000
E. C. Bryan, Boscobel.....	Reil Branch	5,000
Chas. McMillan, Boscobel.....	Marietta Branch	5,000
A. De Voe, Boscobel.....	Sander's Creek	5,000
J. B. Johnson, Montfort.....	Blue River	5,000
D. O. Eustice, Livingstone.....	Head of Platte River.....	10,000
J. W. Beetham, Fennimore.....	Fennimore Branch	2,500
	Johnson Branch	2,500
F. N. Kern, Fennimore.....	Johnson Branch	5,000
J. C. Kirkpatrick, Rewey.....	Pecatonica River	5,000
F. B. Callis, Lancaster.....	Head of Grant River.....	12,500
		72,500

Distribution of Fish.

RAINBOW TROUT DISTRIBUTION, 1898—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
JACKSON COUNTY—		
J. B. Alward, Millston.....	Robinson Creek	5,000
H. A. Bates, Sechlerville.....	Lowe Creek	5,000
F. Dudley, Alma Center.....	Bovee Creek	10,000
		20,000
JEFFERSON COUNTY—		
L. H. Washburne, Palmyra.....	Aurelin Spring Brook	5,000
E. R. Trippe, Palmyra.....	Palmyra Spring Brook	5,000
		10,000
JUNEAU COUNTY—		
John Conway, Elroy	Miller's Prairie Creek	5,000
LA CROSSE COUNTY—		
Alex. Johnson, West Salem.....	McEldowney Creek	5,000
O. Evenson, West Salem.....	Adams Valley Creek	5,000
Jas. McCord, La Crosse.....	Half-way Creek	5,000
Benedict Ott, La Crosse.....	Coon Creek	7,500
Jas. J. Hogan, La Crosse.....	Mormon Cooley	7,500
	Fish-back Creek	10,000
		40,000
LA FAYETTE COUNTY—		
H. A. Bresee, Benton.....	Fever River	5,000
LINCOLN COUNTY—		
H. A. Atcherson, Tomahawk.....	Spring Creek	5,000
John P. Hughes, Tomahawk.....	Tomahawk River, above Dam	2,500
	Squaw Creek	5,000
	Spirit River	2,500
	Bay Mill Creek	5,000
Alex. F. Empey, Merrill.....	Barns' Creek	5,000
Julius Thileman, Merrill.....	North Brch., Prairie River..	5,000
Wm. H. Flett, Merrill.....	Devil Ck. and other Streams	12,500
		40,000
MARATHON COUNTY—		
R. W. Pinder, Wausau.....	Head of Plover River.....	5,000
David Winton, Wausau	Winton Creek	2,500
Fred Genrich, Wausau	Eau Claire River	2,500
J. M. Smith, Wausau.....	Little Rib River	2,500
Chas. Winton, Wausau.....	Plover River	2,500
John Miller, Wausau.....	Mow Brook	2,500
Neal Brown, Wausau.....	Eau Claire River.....	2,500
C. S. Blair, Mosinee.....	Big Rib River	5,000
F. W. Heath, Spencer.....	Hog Creek	5,000
	Little Eau Pleine River.....	10,000
		40,000
MARINETTE COUNTY—		
Geo. W. Taylor, Marinette.....	North Brch., Thunder River..	5,000
	South Brch., Thunder River..	5,000
	Beaver Creek	10,000
John Wood, Amberg.....	Pike River	10,000
John Huff, Wausaukee.....	Wausaukee River	10,000
W. A. Brown, Marinette.....	Rat Creek	5,000
	Shepard Creek	5,000
		50,000

Distribution of Fish.

RAINBOW TROUT DISTRIBUTION, 1898—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
MARQUETTE COUNTY—		
Samuel Stowe, Oxford.....	Neenah River	2,500
C. E. Pond, Westfield.....	Montello River	5,000
J. H. Coon, Oxford.....	Cheedle Creek	2,500
	Campbell Creek	2,500
W. J. Ogle, Oxford.....	Huber Creek	2,500
Hans Stalker, Oxford.....	Warden Creek	2,500
F. W. Kline, Westfield.....	Carman Creek	2,500
Julius Warnke, Westfield.....	Duck Creek	2,500
H. E. Stalker, Oxford.....	Crooked Creek	2,500
Meinke & Behn, Westfield.....	Duck Creek	5,000
		30,000
MONROE COUNTY—		
Saml. Sloggy, Ontario	Brusk Creek	2,500
	Billing's Creek	2,500
	Brey Creek	2,500
	Cook Creek	2,500
Melvin Lawton, Warrens.....	Sand Creek	2,500
	Wymon Creek	2,500
L. L. Gillette, Warrens.....	Whiskey Creek	5,000
C. H. Campbell, Cashton.....	Taylor Creek	2,500
	Brush Creek	2,500
		25,000
ONEIDA COUNTY—		
O. W. Sayner, Minocqua.....	Bass Lake	5,000
C. C. Yawkey, Hazlehurst.....	Lake Alice	5,000
		10,000
PIERCE COUNTY—		
C. W. Groot, Elmwood.....	Cady Creek	2,500
J. F. Lampert, Elmwood.....	Cady Creek	2,500
E. Holcomb, Spring Valley.....	East Gallo River	2,500
S. J. Fox, Spring Valley.....	Johnson Creek	2,500
G. S. Fox, Spring Valley.....	Gilbert Creek	2,500
B. F. Rastad, Spring Valley.....	Louisey Creek	2,500
C. E. Cox, Spring Valley.....	Gilbert Creek	2,500
W. S. Cheeney, Rock Elm.....	Little Missouri	5,000
D. W. Dutcher, Rock Elm.....	Rush River	5,000
A. O. Belfanz, Rock Elm.....	Little Missouri	5,000
		32,500
POLK COUNTY—		
Albert Rosenbush, Turtle Lake.....	Beaver Brook	2,500
	Spring Brook	2,500
		5,000
PORTAGE COUNTY—		
Geo. L. Strong, Bancroft.....	Duck Creek	5,000
A. C. Wilson, Amherst.....	To-morrow River	5,000
Jacob Childs, Amherst.....	To-morrow River	2,500
Benjamin Flemming, Amherst.....	Een Creek	5,000
		17,500
RICHLAND COUNTY—		
A. J. Dickerson, Lone Rock.....	Calahan Creek	2,500
Chas. Rowley, Lone Rock.....	Carl Creek	2,500
M. D. Elliot, Lone Rock.....	Weitzel Creek	2,500
H. W. Haskell, Sr., Lone Rock.....	Martell Creek	2,500
J. L. Hodson, Lone Rock.....	Norwegon Creek	2,500

Distribution of Fish.

RAINBOW TROUT DISTRIBUTION, 1898—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
RICHLAND COUNTY—Continued.		
Aug. Scheele, Lone Rock.....	Tennant Creek	2,500
O. F. Taylor, Lone Rock.....	Meyer's Creek	2,500
M. S. Bowler, Richland Center.....	Willow Creek	5,000
C. E. Jaquish, Neptune.....	Tributary, Willow Creek.....	5,000
J. W. Ferguson, Woodstock.....	Ferguson Creek	5,000
		32,500
ST. CROIX COUNTY—		
L. G. Greene, Hudson.....	Willow River	5,000
Dr. S. L. Pickett, Wilson.....	Gilbert Creek	2,500
	Beaver Creek	2,500
		10,000
SAUK COUNTY—		
J. E. Morgan, Spring Green.....	Sneed Creek	5,000
	Howey Creek	2,500
S. P. George, Spring Green.....	Wilson Creek	2,500
D. W. Morgan, Spring Green.....	Needham Creek	2,500
Barney Pronald, Spring Green.....	Sugar Grove Creek	2,500
H. M. Acott, Baraboo.....	Baxter Creek	5,000
J. W. Davis, Baraboo.....	Helm's Creek	2,500
	Martin Creek	2,500
H. D. Potter, Baraboo.....	Pine Creek	2,500
A. Coleman, Reedsburg	Powers' Creek	2,500
	Behn Creek	2,500
W. E. Gosch, Reedsburg.....	Copper Creek	2,500
H. C. Hunt, Reedsburg.....	Twin Creek	5,000
R. P. Perry, Reedsburg.....	Winnie Creek	5,000
J. E. Morgan, Spring Green.....	Wyoming Creek	2,500
	Branch of Bear Creek.....	2,500
W. B. Pearl, Baraboo.....	Devil's Lake	37,500
		87,500
SHAWANO COUNTY—		
P. A. Holm, Tigerton.....	Delaglies Creek	5,000
J. Lehman & Son, Tigerton.....	Tiger Creek	5,000
		10,000
TREMPEALEAU COUNTY—		
E. A. Olson, Osseo.....	Beef River	5,000
Wm. McKivergin, Blair.....	Trempealeau River	5,000
Simon Bergsing, Blair.....	Blair Mill Pond	5,000
O. P. Christianson, Whitehall.....	Spring Valley Creek	5,000
H. E. Simpson, Arcadia.....	Trout Run	5,000
		25,000
VERNON COUNTY—		
Robt. Hammer, Hillsboro.....	Branch of Baraboo River.....	5,000
	Hohlfeldt Creek	2,500
	Heeling Creek	2,500
	Langor Creek	2,500
F. M. Minshall, Viroqua	Bishop Branch	2,500
	Harrison Branch	2,500
C. J. Skough, Westby.....	West Brch., Kickapoo River..	5,000
	Spring Cooley Creek	5,000
Frank S. Mott, Viroqua.....	McGraw Creek	5,000
		32,000

Distribution of Fish.

RAINBOW TROUT DISTRIBUTION, 1898—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
VILAS COUNTY—		
D. H. Sargent, Conover	Muskrat Creek	2,500
	Seven-mile Creek	2,500
Harvey Rowell, State Line.....	Iron Run	5,000
A. McKenzie, Eagle River.....	Deer-skin Creek	5,000
W. J. Walsh, Eagle River.....	Skling Creek	5,000
Salsich and Wilson, Star Lake.....	Plum Creek	5,000
	Lost Creek	5,000
		30,000
WALWORTH COUNTY—		
A. B. Alrick, Whitewater.....	Bluff Creek	2,500
	Gould Creek	2,500
H. M. Trippe, Whitewater.....	Brodway Creek	2,500
	Steeles Creek	2,500
Ed. Engleretsend, Whitewater	Big-spring Creek	2,500
	Tiger Creek	2,500
Chas. S. Weeks, Whitewater.....	Island Creek	2,500
	Territorial Creek	2,500
		20,000
WASHBURN COUNTY—		
J. W. Harmon, Spooner	Beaver Brook	5,000
WASHINGTON COUNTY—		
Henry B. Kaempfer, West Bend.....	Silver Creek	5,000
WAUKESHA COUNTY—		
W. H. Farmer, Eagle.....	Kilts Springs.....	5,000
H. Bowman, Genesee.....	Spring Lake Brook	5,000
H. Husten, Eagle.....	Husten's Lake	5,000
T. H. Carlin, North Prairie.....	Supernong Creek	5,000
Wm. H. Tuohy, Eagle.....	Andorfer's Spring	5,000
R. H. Hunkins, Waukesha.....	Spring Lake	5,000
C. D. Van Brunt, Dousman.....	Koch's Lake	12,500
		40,000
WAUPACA COUNTY—		
Ole C. Sether, Scandinavia.....	Spaulding Creek	2,500
	Paulson Creek	2,500
J. E. Phillips, Iola	Hanson Creek	5,000
C. F. Taylor, Iola	Taylor Creek	2,500
	Nordy Springs	2,500
Chas. H. Bowers, Sheridan	Peterson Creek	2,500
Thor. Morgan, Sheridan.....	Morgan Creek	2,500
Oliver Olfson, Sheridan.....	Silver Creek	2,500
Saml. Torgerson, Sheridan.....	Headland Creek	2,500
H. Olfson, Waupaca.....	Steadman Creek	2,500
E. E. Chamberlain, Waupaca.....	Pearl Creek	2,500
	Emmons Creek	2,500
Guy Mumbrue, Cedar Lake.....	Tributaries to Perry Creek....	5,000
Enor Lynch, Crystal Lake.....	Crystal Creek	2,500
	Cedar Creek	2,500
M. Ryan, Scandinavia	Streams in Townships of Scandinavia and Lawrence..	5,000
Jas. H. Anderson, Ogdensburg.....	Knudson Creek	5,000
M. S. Stroud, Symco.....	Shaw Creek	2,500
	Lovell Creek	2,500
C. H. Anderson, Scandinavia.....	Southwest Brch., Little Wolf.	5,000
Campbell and Cameron, Oshkosh.....	Whitcomb Creek	5,000
J. E. Lehr, Clintonville	Spring Brook	5,000
P. Stinson, Clintonville	Hyde Creek	5,000
Otto Voelz, Leopolis.....	West Brch, Embarrass River.	5,000

Distribution of Fish.

RAINBOW TROUT DISTRIBUTION, 1898—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
WAUPACA COUNTY—Continued.		
Chas. E. Johnson, Marble	Shaw Creek	5,000
H. F. Folkman, Clintonville.....	Smith Brook	2,500
C. F. Folkman, Clintonville.....	North Brch., Pigeon River..	2,500
W. B. Jeffers, Sheridan.....	Tributary to Waupaca River..	2,500
		95,000
WAUSHARA COUNTY—		
L. F. Bishop, Coloma Station	Runnels Creek	2,500
Lewie Smith, Coloma Station.....	Hesler Creek	2,500
J. R. McLaughlin, Coloma Station....	Challan Creek	2,500
A. O. Borst, Richford.....	Mecan River	5,000
W. H. Piers, Stevens Point.....	Chaffee Creek	5,000
		17,500
WOOD COUNTY—		
Severe A. Voyer, Centralia.....	Chester Creek	5,000
C. Lyon, Centralia	Railroad Creek	5,000
Reuben Lyon, Centralia	Moccasin Creek	2,500
Chas. Briere, Centralia	Three-mile Creek	2,500
H. C. Trimm, Centralia.....	Bloody Run	2,500
E. A. Benson, Vesper.....	Hemlock Creek	5,000
		22,500
Total distribution, 1898.....	.....	1,155,000

Distribution of Fish.

WALL-EYED PIKE DISTRIBUTION—1898.

Name and Address of Applicant.	Where Planted.	No. of Fish.
ADAMS COUNTY—		
Jesse Kent, Strong's Prairie.....	Big Slough	150,000
ASHLAND COUNTY—		
Andrew Jacobsen, Glidden.....	Dryden Lake	150,000
BARRON COUNTY—		
T. W. Borum, Barron.....	Poskin Lake	200,000
E. W. Kingsbury, Perley.....	Horse-shoe Lake	200,000
Andrew Ryan, Shell Lake.....	Shell Lake	500,000
L. H. Meade, Shell Lake.....	Shell Lake	500,000
W. B. Curtis, Shell Lake.....	Shell Lake	250,000
Ole Wang, Shell Lake	Shell Lake	250,000
		1,900,000
BAYFIELD COUNTY—		
David Archibald, Cable	Long Lake	100,000
Frank Hammill, Cable.....	Bass Lake	100,000
John Brady, Iron River	Iron Lake	150,000
H. H. Augusta, Iron River	Spider Lake	100,000
	Moon Lake	50,000
C. C. Williams, Iron River.....	Muscalonge Lake	150,000
Frank Hammill, Cable	Bass Lake	500,000
David Archibald, Cable.....	Long Lake	500,000
Samuel Bally, Bayfield	Siskowit Lake	900,000
Henry Sykes, Bayfield.....	Planted in Chequamegon Bay.	2,880,000
		5,430,000
CALUMET COUNTY—		
Jos. Wolfinger, Dundas	Woodville Lake	150,000
CHIPPEWA COUNTY—		
C. P. Parker, Chippewa Falls.....	Conwell Lake	150,000
S. R. Kaiser, Cadott	Pike Lake	150,000
L. G. Chasman, Stanley	Brown's Lake	150,000
Robt. Hunter, Eagleton	Camel Lake	100,000
C. A. Stanley, Chippewa Falls	Popple Lake	200,000
C. W. Bronsky, Bruce.....	Amacoy Lake	100,000
C. A. Greene, Appolona.....	Deer Lake	100,000
G. M. Chamberlain, Bruce	Island Lake	100,000
		1,050,000
COLUMBIA COUNTY—		
T. L. Purves, Wycocna	Wycocna Mill Pond	150,000
Weber and Hurd, Fall River.....	Fall River Dam	150,000
Rockafellow and Son, Fall River.....	North Brch., Crawfish River	150,000
		450,000
DANE COUNTY—		
Wm. R. Bagley, Madison.....	Monona Lake	450,000
Saml. Higham, Madison	Monona Lake	200,000
M. C. Clarke, Madison	Mendota Lake	750,000
O. C. Vaughn, Jefferson.....	Lake Ripley	375,000
H. G. Goodlad, Black Earth.....	Black Earth Pond	150,000
H. H. Willard, Mazomanie	Lake Marion.....	300,000
		2,325,000

Distribution of Fish.

WALL-EYED PIKE DISTRIBUTION, 1898—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
DODGE COUNTY—		
G. Stolz, Beaver Dam	Beaver Dam Lake	150,000
H. A. Schluckebier, Beaver Dam.....	Beaver Dam Lake	300,000
D. J. Hotchkiss, Fox Lake	Fox Lake	300,000
John Stoddart, Fox Lake	Fox Lake	300,000
		1,050,000
DOOR COUNTY—		
H. Overbeck, Jr., Sturgeon Bay.....	Clark's Lake	375,000
	Kankaroo Lake	375,000
		750,000
DOUGLAS COUNTY—		
Rudolph Kriede, Gordon	Gartke Lake	100,000
FOND DU LAC COUNTY—		
Frank Beau, Calvary	Wolf Lake	150,000
Peter McGalloway, Dotyville.....	Lake Wolf	150,000
Steffes Bros., Wolf Lake	Wolf Lake	150,000
		450,000
GRANT COUNTY—		
L. C. McCullum, Muscoda.....	Kendal Lake	150,000
GREEN LAKE COUNTY—		
Matt. Whitney, Berlin	Silver Lake	150,000
	Crystal Lake	150,000
H. R. McCullough, Chicago.....	Green Lake	375,000
C. P. Hazeltine, Dartford	Green Lake	375,000
		1,050,000
IRON COUNTY—		
Jos. Odgers, Mercer	Mercer Lake	250,000
	Jim Lake	150,000
	Martha Lake	100,000
		500,000
JACKSON COUNTY—		
L. T. Branch, Sechlerville	Sechler's Mill Pond	150,000
JEFFERSON COUNTY		
H. C. Christians, Johnson Creek.....	Golden Lake	375,550
KENOSHA COUNTY—		
Peter Steinbach, Kenosha	Hooker Lake	375,000
F. H. Schenning, Silver Lake	Silver Lake	750,000
		1,125,000
KEWAUNEE COUNTY—		
D. W. Stebbins, Ahnapee	Seidl Lake	375,000
Geo. M. Mashek, Kewaunee	Kewaunee River above Dam..	300,000
		675,000
LA CROSSE COUNTY—		
A. J. Patterson, North Bend.....	North Bend Lake	150,000
LA FAYETTE COUNTY—		
S. N. Briggs, South Wayne	Pecatonica River	150,000
E. P. Drake, South Wayne.....	Pecatonica River	150,000
		300,000

Distribution of Fish.

WALL-EYED PIKE DISTRIBUTION, 1898—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
LANGLADE COUNTY—		
Geo. Bremer, Summit Lake.....	Summit Lake	150,000
H. A. Muller, Polar	Weirshke's Lake	150,000
C. W. Maney, Elcho.....	Post Lake	150,000
		450,000
LINCOLN COUNTY—		
Q. F. Headstream, Tomahawk.....	Clear Lake	150,000
	Long Lake	150,000
H. A. Atcherson, Tomahawk.....	Mirror Lake	150,000
Howen & Flemming, Tomahawk	Clear Lake	150,000
John P. Hughes, Tomahawk	Tomahawk Lake	300,000
W. H. Flett, Merrill	Lake View	600,000
		1,500,000
MARATHON COUNTY—		
A. H. Wilson, Norrie	Mayflower Lake	150,000
MARINETTE COUNTY—		
W. A. Brown, Marinette	Eagle Lake	300,000
	Mary Lake	300,000
	Julia Lake	150,000
Geo. W. Taylor, Marinette	Noquebay Lake	750,000
C. A. Budlong, Amberg	Beecher Lake	300,000
		1,800,000
MARQUETTE COUNTY—		
Thos. Wells, Jr., Neshkoro.....	Mill Pond on White River....	150,000
F. C. Miller, Westfield	Pleasant Lake	150,000
G. A. Crawford, Westfield.....	Wood Lake	150,000
Frank J. Collins, Montello	Collin's Lake	150,000
J. R. Vroman, Oxford	Goose Lake	150,000
J. B. Wright, Oxford	Manter Lake	150,000
Emil Fritz, Westfield	Lawrence Mill Pond.....	150,000
O. K. Horn, Stevens Point.....	Wood Lake	300,000
Wm. Guderjahn, Liberty Bluff.....	Wood Lake	300,000
		1,650,000
MONROE COUNTY—		
F. L. French, Sparta.....	Pike Lake	150,000
OCONTO COUNTY—		
C. S. Hart, Oconto.....	Kelly Lake	300,000
ONEIDA COUNTY—		
L. A. Harrison, Harshaw.....	Lake Claire	150,000
C. C. Yawkey, Hazlehurst.....	Kaubeschien Lake	300,000
John Davellin, Prout Junction.....	Sugar Camp Lake	150,000
Fred Tripp, Rhinelander	Post Lake	150,000
F. A. Hildebrand, Rhinelander.....	Hildebrand Lake	150,000
Jas. E. Wood, Woodboro.....	Lake Jenny	150,000
		1,050,000
OZAUKEE COUNTY—		
William Weber, Grafton.....	Milwaukee River	300,000
P. J. Kroehnke, Thiensville.....	Milwaukee River	300,000
Wm. H. Horn, Cedarburg.....	Milwaukee River	300,000
		900,000

Distribution of Fish.

WALL-EYED PIKE DISTRIBUTION, 1898—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
POLK COUNTY—		
S. M. De Goller, Richardson.....	Lake Wagner	200,000
Albert Rosenbush, Turtle Lake.....	Horse-shoe Lake	150,000
	Little Round Lake	150,000
William Wilson, Amery.....	Pike Lake	100,000
H. A. Holliday, Amery.....	North Twin Lake	100,000
Lars Anderson, Amery.....	Palmer Lake	100,000
J. F. Snyder, Amery.....	Pike Lake	100,000
C. S. Rimpert, Osceola Mills.....	Round Lake	100,000
E. A. Schrain, Osceola Mills	Sand Lake	100,000
		1,100,000
PORTAGE COUNTY—		
M. S. Murat, Amherst Junction.....	Lake Emily	375,000
P. N. Peterson, Amherst.....	Lime Lake	150,000
O. L. Gordon, Nelsonville.....	Nelson's Mill Pond.....	150,000
J. N. Ranbeck, Peru.....	Reedsberg Lake	150,000
John Een, Amherst.....	Ebert Lake	150,000
B. B. Park, Stevens Point.....	Wisconsin River	150,000
A. T. Bacon, Stevens Point.....	Wisconsin River	150,000
G. O. Gullikson, Nelsonville.....	Nelson's Mill Pond.....	150,000
F. H. Young, Lone Pine.....	Wolf Lake	150,000
		1,575,000
PRICE COUNTY—		
Hugh Boyd, Fifield.....	Bass Lake	150,000
Magnus Pearson, Ogema.....	Spirit River Lake	150,000
		300,000
RACINE COUNTY—		
Waller & Gittings, Burlington.....	Brown's Lake	375,000
RICHLAND COUNTY—		
H. W. Haskell, Sr., Lone Rock.....	Harter Mill Pond.....	150,000
J. H. Sumner, Lone Rock.....	Smith's Lake	150,000
		300,000
ROCK COUNTY—		
Richard Valentine, Janesville.....	Rock River	300,000
A. E. Rich, Janesville.....	Rock River	300,000
		600,000
ST. CROIX COUNTY—		
L. G. Greene, Hudson.....	Bass Lake	200,000
SAUK COUNTY—		
Frank Ramsdale, Madison.....	Planted in Devil's Lake.....	375,000
C. E. Wolfenden, Wonewoc.....	Baraboo River	300,000
R. M. Mathews, Ironton.....	Beeson's Mill Pond.....	150,000
		825,000
SAWYER COUNTY—		
H. B. Shue, Hayward.....	"T" Lake	250,000
SHAWANO COUNTY—		
O. A. Risum, Pulcifer.....	Shawano Lake	150,000
Rustic Resort Co., Embarrass.....	Round Lake	150,000
	Pine Lake	150,000
J. A. Adams, Embarrass.....	Grass Lake	150,000
E. M. Wescott, Shawano.....	Red River	150,000
D. E. Wescott, Shawano.....	Main Wolf River	150,000
	Shawano Lake	300,000
		1,200,000

Distribution of Fish.

WALL-EYED PIKE DISTRIBUTION, 1898—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
SHEBOYGAN COUNTY—		
R. G. Arnold, Glenbeulah.....	Mullett River	150,000
Floyd B. Hesler, Glenbeulah.....	Cedar Lake	150,000
G. Lammers, Cedar Grove.....	Onion River	150,000
Simon Dohmier, Franklin.....	Herman Lake	150,000
J. C. Schmidler, Decada.....	Grahser's Lake	300,000
		900,000
TAYLOR COUNTY—		
C. B. Powell, Medford.....	Nigger Lake	150,000
Fred Myres, Prentice.....	Worcester Lake	150,000
		300,000
TREMPEALEAU COUNTY—		
L. L. Odell, Galesville.....	Galesville Mill Pond.....	150,000
F. G. Davis, Galesville.....	Galesville Pond	150,000
Jas. P. Mallory, Whitehall.....	Michael's Creek	150,000
P. L. Solberg, Whitehall.....	Jacobson Creek	150,000
H. E. Simpson, Arcadia.....	Horse-shoe slough	150,000
S. E. Bergsing, Blair.....	Trempealeau River	150,000
		900,000
VILAS COUNTY—		
Oscar Hill, Minocqua.....	Hill Lake	150,000
O. W. Sayner, Minocqua.....	Plum Lake	225,000
Harvey Selleck, Minocqua.....	Tomahawk Lakes	150,000
Salsich & Wilson, Star Lake.....	Star Lake	300,000
Albert Doolittle, Woodruff.....	Dramond Lake	225,000
Patrick Brazel, Woodruff.....	Spider Lake	150,000
C. J. Coon, Woodruff.....	Trout Lake	150,000
John B. Mann, Woodruff.....	Trout Lake	150,000
Bent Brothers, State Line.....	Black Oak Lake	225,000
	Hardie Lake	150,000
Harvey Rowell, State Line.....	Merrill Lake	150,000
	Goose Lake	75,000
Henry Howlett, Conover.....	Lake (no name)	150,000
A. McKenzie, Eagle River.....	Big Bass Lake	225,000
Fred Morey, Eagle River.....	Cranberry Lake	150,000
D. E. Riordan, Eagle River.....	Gordon Lake	375,000
		3,000,000
WALWORTH COUNTY—		
Frank L. Frazer, Lake Beulah.....	Lake Beulah	225,000
	Potter's Lake	225,000
F. F. Southr, Caldwell.....	Potter's Lake	150,000
B. F. Food, Waterford.....	Tichigan Lake	150,000
William Arnold, Sharon.....	Turtle Creek	300,000
J. C. Reynolds, Lake Geneva.....	Lake Geneva	450,000
Frank S. Moore, Lake Geneva.....	Lake Geneva	300,000
		1,800,000
WASHINGTON COUNTY—		
S. F. Mayer, West Bend.....	Cedar Lake	300,000
M. Wilson, Hartford.....	Wilson's Lake	450,000
John Rosenheimer, Schleiingerville.....	Big Cedar Lake	375,000
	Little Cedar Lake	375,000
Geo. Reilly, Lake Five.....	Lake Five	150,000
		1,650,000

Distribution of Fish.

WALL-EYED PIKE DISTRIBUTION, 1898—Continued.

Name and Address of Applicant.	Where Planted.	No. of Fish.
WAUKESHA COUNTY—		
C. A. Buskirk, Okauchee.....	Oconomowoc Lake	300,000
O. K. Mann, Oconomowoc.....	Nemahbin Lake	450,000
Frank P. Ziegler, Milwaukee.....	Denoon Lake	450,000
A. Melcher, Okauchee	Okauchee Lake	150,000
John C. Koch, Milwaukee	Pine Lake	300,000
L. Maschouser, Nashotah	Okauchee Lake	300,000
A. C. Reitbrock, Hartland.....	Pine Lake	375,000
Wm. H. Tuohy, Eagle.....	Eagle Lake	150,000
B. J. Runwill, Hartland.....	Nagawicka Lake	375,000
		2,850,000
WAUPACA COUNTY—		
S. C. Nessling, Waupaca.....	Chain o' Lakes	750,000
W. L. Wilson, Springwater.....	Long Lake	150,000
M. Ravn, Scandinavia.....	Whitcomb Lake	150,000
Chas. H. Anderson, Scandinavia.....	Silver Lake	150,000
M. S. Stroud, Symco.....	Little Wolf River	150,000
J. E. Phillips, Iola.....	Iola Mill Pond	150,000
J. J. Hangartner, Marion.....	Hopkin's Lake	150,000
Theo. Buettner, Caroline.....	Embarrass River	150,000
M. W. Stinemat, Crystal Lake.....	Pine Lake	150,000
	Sand-bar Lake	150,000
		2,100,000
WAUSHARA COUNTY—		
Chas. Rice, Terrill	Pearl Lake	300,000
W. A. Rugh, Wautoma.....	White River	300,000
G. N. Spaulding, Hancock.....	Fish Lake	300,000
J. W. Gray, Hancock.....	Deer Lake	300,000
W. C. Wiley, Hancock.....	Fish Lake	150,000
W. H. Campfield, Hancock.....	Pine Lake	150,000
L. W. Beach, Hancock.....	Hancock Lake	150,000
M. A. Fuller, Hancock.....	Hancock Lake	150,000
F. M. Smith, Coloma.....	Pleasant Lake	150,000
		1,950,000
WINNEBAGO COUNTY—		
John Maag, Oshkosh.....	Planted in Lake Winnebago	4,375,000
WOOD COUNTY—		
T. E. Nash, Nekoosa.....	Wisconsin River	150,000
W. W. Meade, Centralia.....	Centralia Mill Pond	150,000
Jas. Bogoger, Centralia.....	Wisconsin River	150,000
Geo. L. Williams, Centralia.....	Wisconsin River	150,000
Geo. M. Huntington, Grand Rapids..	Wisconsin River	150,000
M. Curtin, Grand Rapids.....	Wisconsin River	150,000
L. M. Nash, Centralia.....	Mill Creek	150,000
		1,050,000
Total distribution, 1898.....		53,980,000

Distribution of Fish.

LAKE TROUT DISTRIBUTION, 1897.

Where Planted.	No. of Fish.
Off from Milwaukee	360,000
Off from Ahnapee	210,000
Noquebay Lake, Marinette County.....	225,000
Long Lake, Washburn County.....	180,000
Hammil Lake, Bayfield County.....	60,000
Chain O'Lakes, Waupaca County	240,000
Green Lake, Green Lake County.....	240,000
Lake Mendota, Dane County.....	360,000
Shell Lake, Washburn County.....	180,000
Mud Lake, Washburn County.....	18,000
Bass Lake, Bayfield County.....	12,000
Long Lake, Bayfield County	60,000
Cable Lake, Bayfield County	60,000
Whitefish Lake, Douglas County	120,000
Wood Lake, Shawano County (Fingerlings).....	10,000
Chequamegon Bay	7,675,000
Total distribution, 1897.....	10,010,000

LAKE TROUT DISTRIBUTION, 1898.

Where Planted.	No. of Fish.
Off from Milwaukee	153,000
Off from Two Rivers	153,000
Off from Kenosha	153,000
Off from Port Washington	153,000
Off from Algoma	153,000
Off from Sheboygan	153,000
Off from Sturgeon Bay	153,000
Chain O'Lakes, Waupaca County.....	153,000
Wanby Lake, Oconto County.....	153,000
Shell Lake, Washburn County.....	153,000
Lake Monona, Dane County.....	150,000
Chequamegon Bay	5,832,000
Total distribution, 1898	7,512,000

Distribution of Fish.

WHITEFISH DISTRIBUTION, 1897.

Where Planted.	No. of Fish.
Off from Big Sturgeon, Sturgeon Bay.....	2,000,000
Off from Squaw Island, Little Sturgeon.....	4,000,000
Off from Green Island, Lake Michigan.....	2,000,000
In Whitefish Bay, Lake Michigan	2,000,000
In Chequamegon Bay, Lake Superior.....	8,000,000
Total for 1897	18,000,000

WHITEFISH DISTRIBUTION, 1898.

Where Planted.	No. of Fish.
In Chequamegon Bay, Lake Superior.....	3,000,000

BLACK BASS DISTRIBUTION, 1897.

Where Planted.	No. of Fish.
Wood Lake, Marquette County.....	2,300
Berry Lake, Shawano County	2,200
Total distribution, 1897	4,500

6 Fish.

Distribution of Fish.

BLACK BASS DISTRIBUTION, 1898.

Where Planted.	No. of Fish.
Rock Lake, Jefferson County	10,000
Tug Lake, Lincoln County	4,000
Lake View, Lincoln County	6,400
Clark's Lake, Door County	3,000
Kangaroo Lake, Door County	2,900
Seidl Lake, Kewaunee County	2,500
Grimm Lake, Kewaunee County	2,000
Oconomowoc Lake, Waukesha County	8,200
Devil's Lake, Sauk County	10,000
Delavan Lake, Walworth County	9,600
Milwaukee River, Milwaukee County	6,800
Elkhart Lake, Sheboygan County	10,200
Pike Lake, Washington County	2,600
Cedar Lake, Washington County	5,000
Mirror Lake, Sauk County	8,000
Moose Lake, Waukesha County	7,000
Lake Mendota, Dane County	7,000
Chain O'Lakes, Waupaca County	2,000
Lake Emily, Portage County	5,000
Total distribution, 1898	112,200

WHITE BASS DISTRIBUTION, 1897.

Where Planted.	No. of Fish.
Fox Lake, Dodge County	450
LaBelle Lake, Waukesha County	300
Oconomowoc Lake, Waukesha County	300
Okauchee Lake, Waukesha County	600
Pine Lake, Waukesha County	625
Green Lake, Green Lake County	450
Pine Lake, Waukesha County	350
Forest Lake, Waukesha County	200
Cedar Lake, Washington County	450
Swan Lake, Columbia County	340
Okauchee Lake, Waukesha County	600
Silver Lake, Waukesha County	200
La Belle Lake, Waukesha County	100
Oconomowoc Lake, Waukesha County	250
Pike Lake, Washington County	250
Lauderdale Lakes, Walworth County	650
Green Lake, Green Lake County	300
Delavan Lake, Walworth County	700
Lake Geneva, Walworth County	650
Elkhart Lake, Sheboygan County	650
Devil's Lake, Sauk County	700
Total distribution, 1897	9,115

Distribution of Fish.

DISTRIBUTION OF WHITE BASS, 1898.

May 3.	Planted in Oconomowoc Lake, Waukesha County.....	500
May 4.	La Belle Lake, Waukesha County.....	500
May 4.	Chain O'Lakes, Waupaca County.....	225
May 4.	Cedar Lake, Washington County.....	350
May 5.	Fox Lake, Dodge County.....	500
May 5.	Devil's Lake, Sauk County.....	500
May 6.	Lake Beulah, Walworth County.....	500
May 7.	Lake De Nevu, Fond du Lac County.....	500
May 7.	Green Lake, Green Lake County.....	550
May 7.	Oconomowoc Lake, Waukesha County.....	500
May 9.	Nemahbin Lake, Waukesha County.....	500
May 9.	Pewaukee Lake, Waukesha County.....	500
May 9.	Shawano Lake, Shawano County.....	550
May 10.	Cedar Lake, Washington County.....	500
May 10.	Pike Lake, Washington County.....	500
May 10.	Rock Lake, Jefferson County.....	495
May 11.	Chain O'Lakes, Waupaca County.....	500
May 11.	Okauchee Lake, Waukesha County.....	600
May 11.	Lake Ripley, Dane County.....	550
May 12.	Brown's Lake, Racine County.....	600
May 12.	Nagawicka Lake, Waukesha County.....	300
May 12.	Pine Lake, Waukesha County.....	300
May 12.	Golden Lake, Jefferson County.....	525
May 13.	Lake Emily, Portage County.....	625
May 13.	Pine Lake, Waukesha County.....	600
May 13.	Pelican Lake, Oneida County.....	500
May 14.	Pardeeville Lake, Columbia County.....	500
May 14.	West Lake, Columbia County.....	100
May 15.	Hooker Lake, Kenosha County.....	275
May 15.	Paddock's Lake, Kenosha County.....	275
May 16.	Nemahbin Lake, Waukesha County.....	500
May 17.	Noquebay Lake, Marinette County.....	625
May 17.	Nashotah Lake, Waukesha County.....	500
May 17.	Mercer Lake, Iron County.....	500
May 18.	Lake Geneva, Walworth County.....	500
May 20.	Fowler Lake, Kenosha County.....	550
May 20.	Twin Lakes, Waukesha County.....	550
May 21.	Oconomowoc Lake, Waukesha County.....	500
May 23.	Sugar River Pond, Green County.....	600
May 23.	Nagawicka Lake, Waukesha County.....	500
May 23.	Black Oak Lake, Vilas County.....	525
May 24.	Second Lake, Dane County.....	500
May 25.	Berry Lake, Oconto County.....	550
May 25.	Green Lake, Green Lake County.....	600
May 26.	Green Lake, Green Lake County.....	500
May 26.	La Belle Lake, Waukesha County.....	500
May 27.	Devil's Lake, Sauk County.....	500
May 27.	La Belle Lake, Waukesha County.....	500
		23,420

NOTE.—The white bass planted as per above statements were mature or full-grown fish, ripe for spawning.

Distribution of Fish.

DISTRIBUTION OF MUSKELLUNGE FRY, 1897.

Where Planted.	No. of Fish.
Lost Lake, Sawyer County	200,000
Lake DeNeavu, Fond du Lac County.....	200,000
Green Lake, Green Lake County.....	700,000
Total distribution, 1897.....	1,100,000

DISTRIBUTION BY HATCHERIES.

1897.

MADISON HATCHERY.		
Brook trout	1,949,000	
Rainbow trout	1,191,000	3,140,000
MILWAUKEE HATCHERY.		
Whitefish	18,000,000	
Wall-eyed pike	15,300,000	33,300,000
BAYFIELD HATCHERY.		
Lake trout (fry)	10,000,000	
Lake trout (fingerlings)	10,000	
Wall-eyed pike	8,000,000	18,010,000

1898.

MADISON HATCHERY.		
Brook trout	1,574,000	
Rainbow trout	1,155,000	
Lake trout	150,000	2,879,000
BAYFIELD HATCHERY.		
Brook trout	328,500	
Lake trout	7,362,000	
Wall-eyed pike	11,380,000	
Whitefish	3,000,000	22,070,500
OSHKOSH STATION.		
Wall-eyed pike		42,600,000

Summary of Distribution—Fish Car “Badger.”

SUMMARY OF DISTRIBUTION, ALL KINDS, 1897 AND 1898.

	1897.	1898.
Brook trout	1,949,000	1,092,500
Rainbow trout	1,191,000	1,155,000
Lake trout (fry)	10,000,000	7,512,000
Lake trout (fingerlings)	10,000	.....
Whitefish	18,000,000	3,000,000
Wall-eyed pike	23,300,000	53,980,000
Muskellunge	1,100,000	.....
Black bass	4,500	112,200
White bass	9,115	23,420
Totals	55,563,615	67,685,120

MILES TRAVELED BY THE FISH CAR, “BADGER”, OVER THE SEVERAL RAILWAY LINES IN WISCONSIN DURING THE YEARS 1897 AND 1898.

	1897.	1898.
C., M. & St. P. Ry.....	6,469	5,976
C. & N. W. Ry.....	5,527	7,825
C., St. P., M. & O. Ry.....	3,182	2,165
Wisconsin Central Lines	3,065	4,147
G. B. & W. Ry.....	296	482
C., B. & N. Ry.....	.....	706
K., G. B. & W. Ry.....	84	.....
A. & W. Ry.....	102	148
Totals	18,725	21,449

MEALS SERVED ON THE FISH CAR, “BADGER”, 1897 AND 1898.

	1897	1898
.....	836	14c.
.....	1,166	11.5c.

Report of Fish and Game Warden.

REPORT OF STATE FISH AND GAME WARDEN.

To the Honorable, the Commissioners of Fisheries:

Gentlemen:—Pursuant to section 1498l, chapter 62, R. S. 1898, I beg leave to submit the following report for the past year:

Total number of arrests reported.....	614
Total number of convictions reported.....	511
Amount of fines reported.....	\$6,415.00
Number resident deer licenses issued, 1897.....	11,479
Number resident deer licenses issued, 1898.....	11,913
Number non-resident deer licenses issued, 1897.....	38
Number non-resident deer licenses issued, 1898.....	29
Received from sale of confiscated game.....	\$650.00
Number persons sent to jail for default in payment of fine.....	39
There has been destroyed, as provided by law, nets, boats, set-lines, and other public nuisances having an estimated value of.....	\$15,000.00
Upwards of 100 miles of gill nets have been seized and destroyed.	

In addition to the number of cases reported above there are several now pending.

While I have not been able to ascertain the amount of compensation paid to county wardens, I am sure the receipts from licenses, fines and sale of confiscated game will fully cover the expenses of this department.

The report of the work of this department during the past year is not as complete as desirable, owing to the failure of many local wardens to make report to this office, but the above, which is practically the work of the special deputies only, is sufficient to show that an earnest and conscientious effort has been made to enforce the fish and game laws of this state and these efforts have met with greater success than ever before.

Report of Fish and Game Warden.

WARDEN SYSTEM.

Experience convinces me that the county warden system, if not entirely a failure, is very far from satisfactory, and if the best results are to be looked for some other system should be adopted. It is difficult if not impossible to get persons fitted for the work to accept an appointment where the compensation at the best is small and the work if properly performed requires much time. Much of the work of a faithful warden is not apparent because in a large number of the investigations necessarily made upon complaints or suspicion sufficient proof is not obtainable to warrant proceedings and the public generally is therefore unaware of the work which has been done. Many days of weary watching and waiting and much travel and exposure are necessary many times before an offender is captured or the appurtenances illegally used by him are discovered and destroyed. Again in case of local wardens the offenders are his neighbors and he dislikes to get their ill-will by causing their arrest.

The only way to have efficient service is to have a force of deputies selected because of their fitness for the work expected of them, and pay them so that they can afford to give their time and best efforts to the work. Such men can be readily found if they are paid sufficient so that they can make this work their business.

The legislature of 1897 provided for the appointment of five special deputies in this state, and the results of the work of these officials since that law took effect fully demonstrates what might be accomplished if this system was extended. As before stated the showing of the work accomplished during the past year is practically all the work of these special deputies, and fully warrants the recommendation which I earnestly make that this system be extended. A force of twenty to thirty men selected be-

Report of Fish and Game Warden.

cause of their fitness for this kind of work, and who could be sent at any time to any part of the state where their services are most needed would be worth an army of local men, as they would be removed from the influences which renders the work of the local men most unpleasant and difficult, and would be receiving sufficient compensation so that they could give their whole time and attention to their work.

Experience has shown that much can be accomplished by a stranger in a community where the local men have utterly failed in their attempts to enforce the law. I cannot too strongly urge the necessity for a larger force of special deputies as the work requires it and I know the results that will follow the adoption of this recommendation will prove its wisdom. As some counties bordering on large lakes, or which have numerous small lakes might deem it advantageous to have local wardens to assist in the work of protecting the fish in their waters I do not recommend the abolishment of the county warden system entirely, but would provide that the appointment of county wardens be left optional with the counties, their appointment to be made by some board designated by law, and that they be responsible to said board. I would only require that the results of the work of such county deputies be reported to this department either by the deputies themselves or the board to whom they report so that they may become a source of statistical information.

LICENSE LAW.

The deer license law enacted by the legislature of 1897, although imperfect, has been beneficial in regulating the hunting of that animal. It has been the means of giving for the first time a line upon the great army of hunters who annually engage in the chase for this animal, and it will

Report of Fish and Game Warden.

doubtless be a surprise to most people to learn that during the past two years there has been each year about 12,000 deer licenses issued in this state. The number of resident hunters is no greater than before the enactment of the license law, but owing to the heavy non-resident license fee from 3,000 to 5,000 non-resident hunters who formerly came here to hunt deer have been kept out of the state. It would seem that with such an army of hunters the deer of this state would be exterminated within a few years, but woodsmen and others in a position to know, say that they are yet plentiful. It is but reasonable to suppose, however, that if this vast army of hunters continue to pursue them annually they must decrease in number unless stringent regulations are adopted to protect them.

In another part of this report I have strongly recommended an extension of our special warden system. As the adoption of this recommendation would increase the expense of this department, I would further recommend the enactment of a general hunters' license law. For residents of the state I would suggest that this license be fixed at a sum that would not be burdensome, but which would raise sufficient revenue to meet the expenses of this department. I am fully satisfied a license of one dollar would be sufficient to raise all the money necessary to pay the operating expenses of the department under the proposed extension of the special warden force. I would therefore recommend that a resident hunter's license of one dollar be fixed for each person desiring to hunt any of the birds or animals protected by the laws of this state.

As the expense of propagating, distributing and feeding the fish and game falls upon the people of this state, it is only just to our own people that non-residents be required to pay a larger fee for a license. I would suggest that the license fee for non-residents be made not less than five dollars, or more if deemed just and proper. It should be

Report of Fish and Game Warden.

understood that this license fee applies to the hunting of game except deer, the deer license to remain as fixed by the representatives of Michigan, Minnesota, Wisconsin and other states, at one dollar for residents and twenty-five dollars for non-residents. Should these recommendations be accepted and laws enacted carrying them out the expense of the enforcement of the fish and game laws would fall where, in my opinion, it rightfully should, upon those who enjoy the pleasure of hunting and receive the direct benefits derived from the proper protection of our fish and game, and no burden would be placed upon the state in consequence of the extension of the special warden force.

GENERAL SUGGESTIONS.

The large number who hunt and fish in this state makes it necessary, if our fish and game are to be preserved, that great care should be taken in fixing the proper open seasons, so as to have them interfere as little as possible with the breeding, nesting and spawning seasons. I would suggest a later season for deer, as the does would then be in hiding and therefore a less number would be killed. It would also insure colder weather, so that the animals killed could be better preserved. Animals fatally wounded would be less likely to escape, only to become the prey of wolves or other wild animals, if there was snow on the ground, so they could be followed to where they fall after being shot. The number of accidents and loss of human life during the deer season, from carelessness, inexperience and the use of powerful modern firearms is a matter that should receive consideration, and, if possible, some means devised to lessen the danger.

The danger to human life from the set-gun and the practice of "shining" is so great that both should be discouraged by the severest of penalties. Both, in my opinion, should be made penitentiary offenses.

Report of Fish and Game Warden.

As the great inducement for extensive violation of our fish and game laws is the profits enjoyed from illegal acts by the sale of the fish and game, more stringent laws should be enacted governing dealers and transportation companies. To carry out these laws wardens should be clothed with as much authority as possible so that they may examine packages offered for shipment or discovered in transit which are believed to contain contraband goods. Since the enactment of the law prohibiting the shipment of feathered game out of the state numerous attempts have been made to evade the same. Shipments were made to some point near the state line to some fictitious person with the intent of having them reshipped to points outside the state. During last fall hundreds of dollars worth of game birds were thus shipped to Milwaukee. When thus shipped the game should become contraband and subject to seizure and sale by the state. No venison should be permitted under the law to be shipped outside the state except where a non-resident coupon is attached to same. The license law should provide for the cancellation of all coupons when shipments are offered. No person should be permitted to have in his possession the coupons taken from the license of another.

The open season for brook trout is in my opinion too long in this state and should be closed one month earlier. It is a very noticeable fact that notwithstanding the large number of trout fry planted annually the number of trout is steadily growing less. This is not surprising when the streams are whipped constantly by thousands of people from April to September. In this connection it might be well to consider the advisability of limiting the season for the use of artificial flies in fishing for trout. This would prevent the taking of thousands of small fish. Wisconsin with its numerous and beautiful lakes, rivers and brooks, its vast forests, expansive prairies and extended marshes

Report of Fish and Game Warden.

is the natural home of a great variety of fish, game animals and game birds, and these can be made a great source of revenue to the people of this state by the enactment of wise and practical laws looking to their preservation.

Every person who comes within our borders to hunt or fish leaves several times the value of whatever he gets in the way of fish and game with our people. It is far better to have people from outside the state come here for their fish and game than it is to ship the game to an outside market. Not, therefore, from a sentimental but from a business point of view, the subject of the preservation of our fish and game demands careful consideration. The older states of the union realize this and are putting forth every effort to improve their present conditions in this respect. It is stated on what is believed to be good authority that about three million dollars are annually left in Maine by people who are attracted there by the hunting and fishing to be had in that state. I can see no good reason why Wisconsin with all its natural resources in this direction, with proper laws to guard them, cannot be made equally as attractive and reap as great benefit from the advantages which nature has so liberally bestowed upon her.

Added to what nature has done for our state is the work of our commissioners of fisheries. Their efforts to replenish our waters have been crowned with great success, and with improved facilities they can do much more in the future. Already their earnest and successful work has attracted attention and given to them a deservedly wide reputation in their line.

To the work of fish culture might be added the breeding of game birds. Other states have taken hold of the work of hatching and planting pheasants, and are meeting with success. Private individuals in this state have demonstrated that game birds can be successfully reared here

Report of Fish and Game Warden.

and with the great abundance of natural cover to be found in all parts of Wisconsin there is no doubt but that if the matter was taken hold of in earnest its good results would soon be made apparent.

The success or failure of officials to enforce our fish and game laws depends largely upon public sentiment. All who have given this matter any attention must have discovered that there is a growing better sentiment in favor of the enactment and enforcement of wise laws looking to the preservation of our fish and game. No better evidence of this is needed than can be found in the fact that little difficulty is now met in securing convictions upon proof of guilt, where a few years ago any attempt to prosecute a case of this nature was little better than a farce. Local clubs or organizations do much to build up a healthy sentiment and assist the officials in the work of enforcing the laws and should be encouraged by all true sportsmen. The prejudice formerly existing against laws for the protection of fish and game, on the theory that they were inspired by and enacted in the interest of city sportsmen, if not entirely gone, is rapidly passing away, and with it a great handicap to the enforcement of these laws. The decision of our courts sustaining the rights of the public as against club men who have endeavored to gain a monopoly of some of the best hunting and fishing grounds, has done much to dispel this prejudice, and it will be fortunate when the desire to have wise laws enacted for the preservation of our fish and game is sufficiently strong to overcome all feelings of selfishness.

At the last session of the legislature a committee was appointed to meet with representatives from neighboring states for the purpose of securing more uniform game laws. A meeting was held in Chicago in the winter of 1898 and was attended by representatives from Illinois, Ohio, Michigan, Minnesota, North Dakota and Wisconsin.

Artificial Propagation vs. Close Season.

After a careful consideration of the subjects before it the convention selected a committee of which Senator Green of this state was made chairman, to draft a bill covering the points considered. This has been done and will be presented to the legislature at the present session. Many of its features are very important and if enacted into law will result in much good.

Respectfully submitted,

J. T. ELLARSON,
State Fish and Game Warden.

ARTIFICIAL PROPAGATION VS. CLOSE SEASON FOR
THE GREAT LAKES.

(A paper read by Superintendent Nevin at a meeting of the American Fisheries Society, at Omaha, Neb., July 22, 1898.)

In as much as some of the states have passed laws making a close season for fishing on the great lakes during the spawning season of certain kinds of fish, expecting thereby to accomplish greater results in increasing the supply of fish thus propelled to devote my paper, for the most part, to an expression of my views of the relative value of the two methods of increasing the supply of valuable food fish in those lakes. It is true that both methods may be employed in the great lakes at the same time, and perhaps with good results; but if both are employed at the same time in the same waters, if the desired increase of fish be forthcoming, the question will then arise as to which method we are to attribute the results; and in consequence it may end in the abandonment of one method for the other, and possibly in the uncertainty of the case, the abandonment of the method which has done the most to bring to us the

Artificial Propagation vs. Close Season.

desired increase of fish. For this reason it seems apropos at this time that a discussion and investigation of both methods be made here and now relative to the results which have been obtained from both methods as employed in the past at different points, together with a presentation of the arguments for and against both methods. We know something of the apparent results from both methods and we have considerable knowledge of both methods. We have the experience of practical men and the conclusions they have drawn, pro and con, which we may discuss here at this time, and thus place on the records of the American Fisheries society our views and our knowledge of these matters; which may be of benefit or at least of interest to those who take up the work of fish culture after it has passed from our hands and Old Time has applied his scythe to the line which binds us to our vocation.

Personally, I have been on the various spawning grounds of the whole chain of great lakes from the gulf of St. Lawrence to Lake Superior during the spawning seasons, and have many times watched the salmon, whitefish and wall-eyed pike spawn in their natural way; and I am convinced that but a very small percentage of the eggs so deposited are fertilized. If as large a number of eggs become impregnated, as is claimed by some people, in the natural process, I inquire, what becomes of the fish after they are hatched? When we come to take into consideration the number of eggs that each female whitefish, lake trout, or wall-eyed pike will produce, we may well make this inquiry. A four pound whitefish will produce 50,000 eggs; a six pound lake trout will produce 8,000 eggs; and a five pound wall-eyed pike will produce about 100,000 eggs.

Some years ago, I had some experience watching whitefish spawn in pens on the Detroit river. The female fish would come to the top of the water and throw her eggs whether there was a male fish in her vicinity or not. To me it seems impossible that the male fish can fertilize one egg in a million that are thrown off by the female, when I know that it is absolutely

Artificial Propagation vs. Close Season.

necessary that the milt come in contact with the eggs immediately after they are thrown off by the female and while the micropyle is open to receive it; and when I consider the small amount of milt possessed by the male and the manner in which it is thrown off into a large body of water.

Another circumstance that confirms me in my belief as to the small number of eggs fertilized by the natural process is the order in which the male and female fish come on to their spawning beds. In the great lakes, the first run of fish in spawning time are males. They are followed in a few days by the females, and in taking spawn from this second run of fish, seven-tenths of the fish taken are females, and it is a difficult matter to get enough male fish to fertilize the eggs taken. It frequently occurs that pails full of eggs are thrown overboard because enough male fish cannot be procured to impregnate them. A few days after the run of females has passed off, a run of small male fish comes on. I have heard many people say that this run of male fish will impregnate the eggs of the earlier run of females. But those of us who have had experience in practical work know that the eggs cannot be fertilized after they have left the fish two hours. Then again, a large part of the eggs which become impregnated are lodged among those which are not fertilized and the fungus growth, with which all fish culturists are familiar, spreads over the mass, and the percentage that hatches must be very small.

The only way that I can suggest that will ever enable us to form an accurate idea of the number of whitefish eggs impregnated naturally is to have a diver go down on the reefs and bars just after the fish get done spawning, and gather up a few gallons of eggs which may be placed in a hatchery and the results noted.

Last fall, I spent three half days on a trout stream and examined numerous spawning beds at the time the trout were spawning in the stream. I had such apparatus as I thought necessary to obtain any eggs that might be on the beds, but we

Artificial Propagation vs. Close Season.

did not find a single egg in any nest that we examined. My purpose was to find the percentage of trout eggs impregnated by the natural process. I shall follow up this work again this fall, and hope for better results.

There are very few good trout streams in which less than one thousand trout spawn naturally each year. These trout should average at least two hundred eggs each, making two hundred thousand eggs deposited in the stream each year. If five thousand trout are hatched and come to maturity, this should certainly be enough to keep the stream well stocked with trout. But our experience teaches us that it does not matter how well a stream is stocked, if it is fished to any extent for two or three seasons, fry must be supplied from the hatcheries if it is to continue to produce good fishing.

I have done some figuring on my own account to get at the number of whitefish eggs, deposited naturally, required to produce one mature fish weighing two and one-half pounds. I have taken the whole number of pounds of whitefish caught on the chain of great lakes, i. e., Lakes Superior, Huron, Michigan, St. Claire, Georgian Bay and Lake Erie (not including fish taken from Lake Erie in Pennsylvania and Ohio waters), which in 1896 was 8,223,900 pounds. Estimating that each fish taken weighed two and one-half pounds, we find that 3,289,560 whitefish were caught. Estimating that there are left in the waters three times as many fish as are taken out, and that six-thirteenths of the fish are females, we find that there were 4,554,747 female fish producing eggs. Allowing an average of 30,000 eggs for each female, we find that 136,642,220,000 eggs were deposited naturally and produced only 3,289,560 mature fish. Thus we find that of 41,568 eggs deposited naturally, only one fish comes to maturity. Of course many things must be taken into consideration in making these estimates; and at best the estimates as well as the results obtained are barely approximate. Yet it gives us something of an idea of the vast

Artificial Propagation vs. Close Season.

number of eggs that must be deposited by the natural process to produce a single mature fish. In making these figures, no account is made of the millions of whitefish fry annually planted by the several states and the United States.

Thus, after spending twenty-five years in the work of fish culture and propagation, I cannot but conclude that an enormous loss of fish of nearly all species occurs in the egg stage, because the eggs deposited by the female are not fertilized. The result is, our streams and lakes become depleted of fish within a short time after men with modern fishing apparatus begin to take fish from the waters for food. Nature's provisions for the survival and increase of the several species of fish are not adequate. To rectify this apparent error in Nature's laws we have resorted to artificial propagation with gratifying results. That we still have much to learn in this work we all agree. But at the same time, I believe that all fish culturists and people whose knowledge of the subject qualifies them to speak intelligently of it will admit the complete success of artificial propagation with many species of fish. I refer particularly to the stocking of streams, once barren, with brook and rainbow trout; and the planting of shad in the rivers both on the Atlantic and the Pacific coasts, facts with which we are all familiar. A few years ago, shad were unknown on the Pacific coast. A few thousand fry were taken from New York state and planted there. Today, shad are as plentiful on the Pacific coast as on the Atlantic. The planting of salmon fry in the rivers of the Pacific coast has done wonders in the way of increasing the salmon. Many other species have been made to increase and multiply very rapidly.

That whitefish eggs can be hatched artificially in large numbers, there is no question; and I hold that given, suitable planting grounds on which the proper food is found in sufficient quantities, and protection to the small partly grown whitefish, there is no reason why we should not have had the same suc-

Artificial Propagation vs. Close Season.

cess in maintaining the supply of these fish as we have had with other species.

So much for artificial propagation.

Relative to the operation of laws providing for a close season on the great lakes, I call attention to the Province of Ontario, Dominion of Canada. The Province of Ontario has had a close season for the fish of the great lakes for the past twenty-five years. The fish protective laws are much more rigidly enforced on the Canadian side of the great lakes than on our side. Recently, I have gone through the several annual reports of the fisheries department of the Dominion of Canada, to find the results of their close season for twenty-five years on the catch of whitefish for the province of Ontario from Lakes Superior, Huron, Erie, St. Claire, Georgian bay and Detroit river. I have compared the catch of whitefish in the Province of Ontario with the catch in the state of Michigan, which has less coast line than Ontario and has not had a close season until this year.

From the last biennial report of the commissioners of fisheries of the state of Michigan, I learn that from the year 1885 to 1893 there was a decrease of 35 per cent. in the catch of whitefish in that state. In the Province of Ontario, bordering on the same waters, for the most part, as the state of Michigan, and where, as I have stated, they have had a close season for twenty-five years, I find that from the year 1889 down to 1896 there was a decrease of 78 per cent. in the catch of whitefish, in spite of the fact that there were 5,400 more nets used in 1896 than in 1889. In 1889, the average number pounds whitefish caught in each net was 433. In 1896, the average number of pounds per net was 125, showing a much larger per cent. of decrease in the Province of Ontario with a close season of twenty-five years standing than in the state of Michigan without a close season. I firmly believe that the reason the decrease in the catch of whitefish is much larger in Canadian waters than in the waters of the state of Michigan is, that the

Artificial Propagation vs. Close Season.

Canadian people have not planted as many whitefish fry in the above named waters as the Michigan fish commission has planted.

Last year, I had the pleasure of taking a trip to Lake Winnipeg and looking over the fishing industry, picking up what information I could relative to fish and fishing on that lake. Taking into consideration the laws in force in relation to catching whitefish, to an on-looker, it would seem that the whitefish could never be exterminated from Lake Winnipeg. No pound nets are permitted in the lake, and no gill nets of less than six-inch mesh. Fishing with nets is not permitted within ten miles of the mouth of any river. All nets are taken out of the water on Saturday and are not reset until the following Monday. No small fish are caught. All the whitefish caught will average four pounds each. The government permits but a certain number of fathoms of nets in the lake at one time, and these must be used only on certain grounds. With these restrictions on fishing, it would seem that this lake should be productive of whitefish for all time to come. However, such does not appear to be the case. In talking with the foreman of one of the fishing companies at Selkirk, I asked him if whitefish are as numerous now as when he first went there, which was some twelve years ago. He replied: "when I first came up here, we would go out in the lake with a tug and I would hold up my fingers to the Indians to indicate the number of fish that I wanted. Every finger that I held up would mean one hundred fish, and they were off with their canoes and dip nets, and would get us all the fish we could carry on the tug. Today our tugs go up on the lake to the fishing grounds some two or three hundred miles to get their supply of fish.

If the government of Canada does not soon begin to plant large number of whitefish fry in this lake, in another decade, the whitefish of Lake Winnipeg will be a thing of the past, in spite of the close season and the stringent laws which they enforce for their protection.

Artificial Propagation vs. Close Season.

I consider a close season for fishing on the great lakes as being in the interest of the syndicate of fish dealers, who, while the fishing is closed for thirty days, are given an opportunity to dispose of their frozen fish which they have stored in their freezers in the northwest, to the disadvantage of the small fishermen on the lakes.

I believe that if it were not for the liberal planting of whitefish fry in the great lakes, the whitefish would have been practically exterminated years since. What we need is protection for the small fish; and artificial propagation will keep the lakes and streams well supplied with desirable food fish.





BIENNIAL REPORT

OF THE

BOARD OF TRUSTEES

OF

Milwaukee Hospital for Insane

FOR THE

TWO YEARS ENDING SEPTEMBER 30, 1898.



MADISON
DEMOCRAT PRINTING COMPANY, STATE PRINTER
1899

MILWAUKEE HOSPITAL FOR INSANE.

BOARD OF TRUSTEES.

CHRISTIAN WAHL.....	Term expires first Monday in May, 1905.
DAVID VANCE.....	Term expires first Monday in May, 1904.
B. B. HOPKINS.....	Term expires first Monday in May, 1903.
J. W. P. LOMBARD.....	Term expires first Monday in May, 1902.
JOHN F. BURNHAM.....	Term expires first Monday in May, 1901.
G. E. GUSTAV KUECHLE.....	Term expires first Monday in May, 1900.
ALFRED L. CARY.....	Term expires first Monday in May, 1899.

Officers of the Board.

B. B. HOPKINS, President.	A. F. WALLSCHLAEGER, Secretary.
ALFRED L. CARY, Vice President.	COUNTY TREASURER, Ex-officio Treasurer.

Executive Committee.

G. E. GUSTAVE KUECHLE.	DAVID VANCE.	J. W. P. LOMBARD.
------------------------	--------------	-------------------

Visiting Committee.

CHRISTIAN WAHL.	JOHN F. BURNHAM.	MRS. EDWARD WALL.
MISS LILLIAN WAHL.	DOCTOR ERNST COPELAND.	

PRESENT OFFICERS OF THE HOSPITAL.

M. J. WHITE, M. D.....	Medical Superintendent.
CARL BRUCK, M. D.....	First Assistant Physician.
O. E. LADEMAN, M. D.....	Second Assistant Physician.
E. L. KENYON.....	Steward.
MISS ADA MAXON.....	Matron.

Consulting Staff.

S. MARKS, M. D.	H. M. FISK, M. D.	WILLIAM MACKIE, M. D.
	G. D. LADD, M. D.	H. V. OGDEN, M. D.
JACOB LANG, M. D.	A. H. LEVINGS, M. D.	ERNST COPELAND M. D.

LETTER OF TRANSMITTAL.

WAUWATOSA, Wis., January 26, 1899.

To his Excellency, EDWARD SCOFIELD, Governor:

We have the honor to submit herewith a complete statement of all facts relating to the government of the Milwaukee Hospital for Insane, during the two fiscal years ending September 30, 1898.

Very respectfully yours,

B. B. HOPKINS,

President,

A. F. WALLSCHLAEGER,

Secretary.

SUPERINTENDENT'S REPORT.

To the Honorable Board of Trustees:

Gentleman—I have the honor to submit herewith my sixth biennial report of the operations of the hospital for the two fiscal years ending September 30, 1898.

The subjoined tables of statistics will serve to set forth the following facts: there remained under treatment September 30th, 1896, 179 male and 176 female patients, making a total of 355; the number of new admissions during the year was, male 54; female 62; total 116. Re-admissions from parole, male 33; female 24; total 57. The whole number under treatment during the year was, male 266; female 262; total 528.

There were discharged during the same year, recovered, males 21; females 18; total 39; as improved, males 22; females 15; total 37; as unimproved, males 11; females 13; total 24; transferred to asylum for chronic insane, males 14; females 17; total 31; the number of deaths during the year was, males 17; females 17; total 34; the total number of discharges for the year was, males 85; females 80; total 165; leaving under treatment September 30th, 1897, males 181; females 182; total 363; the average daily number under treatment during the fiscal period was 364 84-365.

The ensuing year the number of new admissions was, males 81; females 65; total 146; re-admissions, males 18; females 17; total 35. Making the whole number treated during the year, males 80; females 264; total 544 and the average number treated 3-0 89-335.

The discharges during the year, as recovered were, male 30; female 15; total 45. As improved, male 4; female 15; total 19. As unimproved, male 13; female 4; total 17. As not insane, male 2. Transferred to county asylum for

Superintendent's Report.

chronic insane, male 9; female 1; total 10. Transferred to home for feeble minded, male, 2. Making the total discharged during this period, male 60; female 35; total 95. There died during this year, male 27; female 16; total 43. And there remained under treatment September 30th, 1898, male 193; female 213; total 406.

The results attained during the past biennial period will, by reference to the tables annexed, be seen to be quite satisfactory, viz.: a recovery rate of 32 per cent. on new admissions and a death rate of 7 per cent. on the whole number treated.

The general workings of the Hospital have been characterized by the usual degree of harmony in all the departments, which has prevailed for many years past, and without which all efforts towards successful operation would be unavailing. I am proud to say that in every department the officers, employees and attendants seem truly imbued with the idea of thoroughly and unselfishly promoting the interests of the Hospital and the comfort and well being of the patients. Such a state of affairs assuredly reacts in immeasurable degree to the benefit of the unfortunate sufferers; a reverse of such conditions would operate in a manner and degree distressing to contemplate and appreciable only to those of long experience in this line of work.

It will be observed that the increase in population during the last biennial period has been 51 patients. Ample room existed for this number and the capacity of the Hospital will admit of a further increase of about one hundred patients. The expense for maintenance of the increased number of inmates has been provided for by an increased appropriation though not in the sum asked for and required for this purpose.

The past biennial period has been a peculiarly trying one on account of the worry and responsibility attending

Superintendent's Report.

the construction and operation of the new heat, light, and power plant, while gradually abandoning the old plant. The new plant was built in great part on the site of the old, and gradually made to replace it; as the time of starting the new machinery and boilers was quite late in the fall, I might say almost on the verge of winter, the unavoidable delays, mishaps and embarrassments, were extremely trying and worrisome. Fortunately we were not submitted to any lengthy inconvenience, and the patients were supplied with warmth and light so that no actual suffering was experienced.

In addition to this we experienced a visitation of diphtheria, fortunately of a mild type, however, which attacked patients and nurses alike. The extreme difficulty attending the examination and treatment of the average insane person in such a condition cannot be adequately conceived by any but those intimately associated with them. The degree of obstinacy and resistance encountered is something comparatively unknown to the general practitioner and taxes to the utmost the patience and ingenuity of the alienist. Antitoxine proved a most valuable remedy in the treatment of these cases and peculiarly so from its method of administration, namely by subcutaneous injection, thus avoiding the necessity of restraining the patient, save for the purpose of examination. Out of a total number of twenty cases but two resulted fatally; a very satisfactory record. The cases immediately upon developing symptoms of the disease were isolated in the fever cottage and their associates subjected to a careful examination for days following, and in this wise the disease was finally stamped out.

The new heat, light and power plant, previously referred to, was completed in all its details in the month of March, 1897, and as designed and carried out, it constitutes one of the really modern and up to date systems in operation

Superintendent's Report.

in this part of the country. I would simply say that under the new conditions we have effected a saving of between six and seven hundred dollars in the first year. The removal from the building of the laundry, ironing room, drying room, sewing room and bakery has, as predicted in my last report, proven in every way advantageous. The disagreeable odor from the laundry and the intense heat experienced under former conditions in the ironing room, as well as the danger from fire in the old bakery have all been removed and the new departments operated under more safe and sanitary conditions. A large exhaust fan, operated by an electric motor, serves to exhaust the hot air from the rooms and the substitution of electrically heated flat-irons and of a resistance coil in the shirt, collar and cuff mangle, for gasoline used formerly, tends still further to conduce to the comfort and safety of the patients engaged in these departments. It has been demonstrated that the electric flat-irons accomplish about one-third more work than by the old system and they may be said to be most advantageous from every point of view. The bakery is a model of neatness and convenience, containing the latest improved Petersen oven, capable of supplying, if necessary, the demands of one thousand inmates. The sewing room is furnished with a three H. P. electric motor for operating the machines and a vastly increased amount of work can be turned out with a correspondingly lessened degree of labor.

The new general dining room, established in the room formerly occupied by the ironing room, with a capacity of two hundred patients, forms a most desirable arrangement, enabling us to classify patients perfectly. The room is most attractive in appearance and is tastefully decorated with pictures, palms and flowers and presents in fact the appearance of a first class restaurant. The patients appreciate these surroundings acutely and it serves to stimulate

Superintendent's Report.

to good behavior, those in the large general dining room above in order to gain admission to the lower dining room.

The large room in the basement, used formerly as the laundry, has been converted to the use of a smoking room and with its lofty ceiling, many windows and system of ventilation, is most admirably adapted to this purpose. This room adjoins the old drying room, which with additions and alterations will make a model bowling alley for the use of the patients and which improvement I will at some future time recommend for the consideration of your honorable board.

In the general plan of providing immunity from fire, the bedrooms have each been furnished with an electric lamp operated by a switch on the outside of the door casing, so that no oil lanterns are required by the night watches; in addition electric curling iron heaters are placed, one for every two wards of the female department, so as to do away absolutely with the use of coal oil or alcohol for that purpose.

The usual methods of treatment have been pursued during the past biennial period and with gratifying results; the beneficent effects of employment in the many industries pursued in the hospital have been amply demonstrated. During the past year the manufacture of brushes of different kinds, viz., scrub brushes, hair brushes and shoe brushes has been inaugurated and a very creditable article is produced.

The training school has been carried on by the assistant physicians with good results apparent in all the departments, and lectures and clinics by the superintendent have been furnished the students of the medical college and the nurses of the county hospital.

Among the permanent improvements completed during this period may be mentioned the hennery, which adjoins our

Superintendent's Report.

barn buildings, with a capacity of three hundred fowls and the underdraining and cultivating of a parcel of bottom land adjoining the grove and which has proven a most valuable acquisition to our garden; during the first year we raised on only a portion of this piece, consisting of two acres, 600 doz. bunches of celery. The next year this tract was devoted to the cultivation of corn, early cabbage, onions and celery.

Considerable, in the way of grading and of improving the appearance of the grounds generally in the rear of the north wing of the hospital, has been accomplished. Two tasty frame buildings containing the paint shop, mason shop, engineer's repair shop and tool house have been erected in the rear of the new plant adjacent to the ice house. The improvement in appearance effected in the rear of the building is very noticeable. The work of grading in the rear of the south wing will be prosecuted during the winter, as the weather will permit. The ground there is protected from the frost by a heavy covering of marsh hay, and a small quantity is removed at a time, thus permitting us to go on with the work. The exercise and employment thus afforded the working force of patients is very beneficial to them,

The results from the operation of the farm and garden have been very gratifying and an immense amount of canning and pickling has been done with the products thereof. The piggery has been carried on most successfully during the past year; we have about fifty hogs and one hundred pigs and during this period we have consumed about 22,000 lbs. of our own raising.

The work of renewing the plumbing throughout the house has been completed. The old material was used as far as possible and every fixture trapped and back-vented through the roof, rendering the conditions absolutely sanitary in

Superintendent's Report.

every respect. Two closets in place of one as formerly were furnished each ward, and on the front halls white enameled iron flush rim closets were supplied; iron slop sinks lined with gray enamel were placed in each closet and additional wash basins of white enameled iron were furnished for each of the larger wards, thus supplying the needs of the patients adequately. The bath tubs were removed from the wards with the exception of the Hospital ward, on each side, where a white enameled iron roll rim tub was placed for the use of the physically sick and feeble.

The remainder of the patients bathe in the department in the center building set apart for that purpose, where they may indulge in a Turkish, Russian, shower, spray, tub or plunge bath. This permanent improvement in the plumbing I regard as the most important and satisfactory from a standpoint of comfort, convenience and sanitation.

In addition to the foregoing equipment the Gegenstrom or rain bath has been installed in the shampooing room of the Turkish bath, consisting of six overhead sprays, hand douches for use on the slabs and connections with the bath tub to control the temperature of the water supplying it. The bath tubs on the hospital wards have also been connected to a Gegenstrom device, which was specially altered to suit the requirements. This device controls the temperature of the water flowing into the tub as well as that supplied by a hand douche attached to the same apparatus and renders unnecessary testing the degree of heat, by the hand, on the part of the nurse; thus insuring absolute immunity from danger of scalding the patient. The abandonment of the tub for general bathing purposes in this Hospital has in my experience proven highly advantageous in every way. The patient is more thoroughly cleansed and the work of bathing is greatly expedited. There is no chance of two patients using the same water as under the

Superintendent's Report.

old tub system and with the apparatus referred to casualties from superheated water are entirely avoided.

A large amount of painting on the exterior of the building has been done during the past season; the gutters, cornices and woodwork of windows receiving much needed material for their preservation. The work of painting and calcimining the interior of the hospital is in progress at present and a large portion has already been completed. With the aid of attendants and patients six of the twelve wards have been painted and present a very neat and tasty appearance.

The area between the hospital building and the new building has been paved with vitrified brick laid in cement and it forms a most practicable and substantial improvement; furnishing an admirable thoroughfare to the laundry, dry room and bakery, in conjunction with the concrete sidewalk on the south of the new building. The introduction of moisture into the fresh air tunnels is also absolutely prevented thereby.

A food van of ample capacity has been provided, to transport the roastmeat, bread rolls, puddings, pies, etc., from the bakery to the main building and from the nature of its construction the articles conveyed to the food elevators will not be permitted to become chilled in transportation. Arc lights have been located in this area and they furnish adequate illumination in passing between the buildings.

The capacity of the Hospital wards is being increased by about sixteen (16) patients in the aggregate by converting the present dining rooms into dormitories; refectories for these two wards are being fitted up in basement in the rooms formerly occupied as trunk rooms and when finished they will present an attractive appearance and will fulfill the requirements admirably.

At present the wiring of the building for a watchman's

Superintendent's Report.

time recorder system is in progress, the work being done by our own labor. When finished thirty points in the main building, new building, barns, and work shops will be covered and the assurance of regular and systematic observation and inspection of these important points will be most satisfactory and complete.

An Edison graphophone has been purchased and is at present in use for dictating the correspondence of the Hospital as well as for entertainment purposes. With the attachment of a fifty-six inch horn a very creditable and amusing exhibition is afforded and the patients seem highly interested and delighted with this peculiar form of entertainment.

During the past year the purchase of the seven acres fronting on the highway and adjoining the Falbe tract — the acquisition of which has for many years been recognized as most desirable,— was completed and it has certainly proven advantageous, not only in straightening out the lines of the hospital land but serving in a measure to replace the area set apart for the use of the home for dependent children on the Falbe tract.

For the coming year I would recommend the following improvements be instituted and as far as possible carried to completion.

The horse stable adjacent to the hospital building which had been projected for some years past.

The erection of a new piggery contiguous to the barns to replace the old dilapidated building, which has been in service for the past fourteen years.

Wood working machinery in the shape of a lathe, band saw, circular saw; also a pipe thread cutter is required to make the necessary repairs to furniture and pipes and to furnish much desired occupation for a very considerable number of patients skilled in this line who are more or less constantly inmates of the Hospital.

Superintendent's Report.

A dough kneading machine in the bakery, of three barrel capacity, is something in the nature of a necessity to perform the work adequate to the needs of our increased population and ought to be supplied at an early date.

Exhaust fans in the general and center kitchens are requisite to prevent the odors from permeating the building as well as to relieve them of the intolerable degree of heat which has at times rendered the center kitchen particularly objectionable to patients and employes engaged therein.

The piping for an ice water supply to each wing from tanks in those localities in the basement is not only desirable as saving a great amount of labor daily, but would prove a measure of economy in the consumption of ice. The labor could be performed by our own force and the expense for pipe and fittings would be trivial as it is proposed to place only one supply faucet to each flat of two wards, instead of a separate supply fixture to each of the wards.

A piazza roof over the concrete walk to the drying room and bakery with provision for a balcony opening from the ironing room and the sewing room on the second floor is much to be desired both as a means of protection in transporting the food to the general kitchen in inclement weather and affording a cool and shady space in the open air for the lady patients to do their sewing, and a breathing spot for those engaged in the ironing room to resort to in the intervals of their daily labor. This balcony could, if thought proper by your honorable board, be enclosed in glass and would assuredly form a most attractive and material addition to these departments in the winter season.

It is greatly to be hoped that something in the way of grading and beautifying the grounds fronting on the highway can be accomplished during the coming season. The driveway which was originally planned ought certainly to

Superintendent's Report.

be graded and put in use; the drive at present used being a most crude and unsuitable one for an institution of this size and importance.

Lastly the erection of a neat and inexpensive cottage on the Hospital grounds, and at a moderate distance from the buildings, for the use of the Superintendent's family would be highly appreciated after a continuous residence of twelve years within the walls of the Hospital. Moreover, by this plan the capacity of the Hospital could be still further increased to the extent of one hundred patients in the aggregate. The apartments now used by the Superintendent could be turned over to the officers and the fourth floor now occupied by them, together with the third floor, formerly used as a private ward could, with very slight alterations, be made to accommodate, on the dormitory plan, the number of patients already stated. It can readily be conceived that the cost of providing a new building for this number of inmates would be, even at the lowest practicable per capita cost for construction, viz: six hundred dollars per bed. A cottage at a cost of about thirty-five hundred dollars would represent the outlay for providing space for one hundred patients under the plan suggested.

The extension of the Lake Park and Wells Street Electric car line to our gate at an early date is at last an assured fact and it will certainly prove a most welcome innovation to the visiting relatives of the patients as well as to the employees of the five institutions grouped together here.

In this connection I would call attention to the inadequate accommodation afforded visitors to the Hospital in the way of reception room. The reception room at present and for many years in use, has proven too circumscribed for the number of visitors, especially during the summer season. The need of more space for their accommodation has been felt more particularly since the extension of the street

Superintendent's Report.

railway to the village and when the cars are run to the gates of the Hospital, the demand will be still more imperative. I would respectfully suggest that the room now used as the officers' dining room be devoted to the purpose of an additional reception room, and the officers' dining room be transferred to a room admirably suited for the purpose on the private ward in the main building. The scullery, dumb waiter and all conveniences already exist in the room referred to, and without entailing any material cost for the change of location.

The average weekly per capita cost for the past biennial period will be seen, by reference to the financial report, to be \$3.35. This moderate cost for maintenance would not obtain were it not for the fact that the work performed in many hospitals by paid employees is in this Hospital done by patients capable and willing and many of whom are really skilled in their different lines. When it is understood that the laundry is operated by only two employees with the aid of sixteen patients; the ironing room by two employees with the assistance of eighteen patients, and the sewing room, in which all the clothing for female patients, and the underclothing of the males is made, by one employee with the help of fifteen patients; in like manner the farm by one farmer with the labor of about forty patients with their two attendants, and the general kitchen by two cooks aided by twelve patients, it will then be appreciated how the expense is kept down to a minimum. The percentage of occupation for both sexes is most gratifying, approximating 70 per cent.

The usual weekly dancing parties, occasional phantom parties, concerts by the hospital band on the lawn in the summer season, open air dances in the pavilion in the grove, refreshments being served; semi-weekly base ball games with occasional match games with nines from the city, have been furnished the patients, and with great

Superintendent's Report.

pleasure to many of them. Bleachers on the ball grounds accommodating two hundred patients have been supplied. The regular Fourth of July picnics were given and Christmas tree festivities indulged in. Among the special entertainments furnished may be mentioned a four character comedy entitled, "Mr. Mansfield's Return," by our own talent; a grand minstrel performance by the same, consisting of nine persons; a sleight of hand performance by Prof. George Prey, and an exhibition of juggling, interspersed with songs and impersonations, by Prof. Brown; a concert by Dick Allen, "the one man band," a troupe of colored jubilee singers and a magic lantern exhibition by Mr. Edward Butterworth. Sleigh rides were indulged in frequently last winter to the delight of many patients. Gramophone and graphophone recitals have been given in the intervals of dancing at the weekly parties.

Magazines and periodicals to the number of sixteen, have been supplied the patients regularly, and have been thoroughly enjoyed by them. One hundred and forty volumes were purchased for the Hospital Library, and one hundred volumes were donated by Mrs. Edward Cramer, to whom we feel deeply grateful. I have also to gratefully acknowledge donations of a similar kind on the part of Mrs. Jane E. Wright, of Milwaukee, and Mrs. E. J. Seymour, of Wauwatosa.

A large number of patients attended the state fair exhibit in September of each year, also Camp Harvey, and the carnival parade, and many of them seemed to enjoy the diversion thoroughly; the privilege of admission to the fair was again due to the kindly instrumentality of our president and his thoughtfulness for their enjoyment was most thoroughly appreciated.

Changes in the personnel of the medical staff were occasioned by the untimely death of our esteemed first assistant,

Superintendent's Report.

Dr. Frank P. Carter; this event cast a gloom over the hospital and was a matter of profound sorrow and regret to the entire household. The doctor held a warm place in the affections of officers, employees and patients alike and the latter felt greatly the loss of his cheering presence and counsel. Dr. Carl Bruck was promoted to fill the vacancy and Dr. Oscar E. Lademan was appointed to the position of second assistant physician. Both of them are entitled to commendation for faithful and efficient service rendered; the interests and welfare of the patients have been ably and conscientiously attended to by them. Mr. Charles Ide, a member of the senior class of the Wisconsin College of Physicians and Surgeons, occupied the position of clinical assistant the usual period.

Our acknowledgments are due to the mission band of Wauwatosa for their continued interest in the spiritual welfare of our patients as well as to the ladies of the flower mission for kindly visitations: Likewise the local visiting committee for their zealous attention to the Hospital.

The consulting staff of physicians and surgeons are entitled to our sincere acknowledgments for services rendered when the occasion demanded. Dr. A. H. Levings has been appointed to this board during the past year.

I beg to thank your honorable board for the unfailing courtesy and consideration uniformly extended to me in the performance of my official duties.

Respectfully submitted,

M. J. WHITE,

Medical Superintendent.

Statistical Tables.

STATISTICS

For the year ending September 30th, 1897.

Table showing admissions and discharges during year and the number under treatment September 30th, 1897.

	Male.	Fe- male.	Total.
Remaining under treatment Sept. 30, 1896.....	179	176	355
New admissions for the year.....	54	62	116
Re-admissions from parole, bond, etc.....	33	24	57
Whole number treated.....	266	262	528
Discharged recovered.....	19	15	34
Discharged improved.....	24	18	42
Discharged unimproved.....	11	13	24
Transferred to county asylum for chronic insane....	14	17	31
Died.....	17	17	34
Total discharged.....	85	80	165
Remaining under treatment Sept. 30th, 1897.....	181	182	363
Average number treated.....			364 ⁸⁴ / ₈₈₅

Age of those admitted.

	Male.	Fe- male.	Total.
Ten to fifteen.....	1	.....	1
Fifteen to twenty.....	6	2	8
Twenty to twenty-five.....	8	10	18
Twenty-five to thirty.....	9	17	26
Thirty to thirty-five.....	19	18	37
Thirty-five to forty.....	17	9	26
Forty to forty-five.....	13	8	21
Forty-five to fifty.....	6	9	15
Fifty to fifty-five.....	.....	5	5
Fifty five to sixty.....	3	4	7
Sixty to sixty-five.....	5	.....	5
Sixty-five to seventy.....	.....	3	3
Eighty to eighty-five.....	.....	1	1
Total.....	87	86	173

*Statistical Tables.**Form of mental disorder on admission.*

	Male.	Fe- male.	Total.
Mania, acute.....	15	18	33
Mania, chronic.....	2	7	9
Mania, recurrent.....	5	7	12
Mania, puerpural.....	.....	2	2
Melancholia, acute.....	17	24	41
Melancholia, chronic.....	8	12	20
Dementia, primary.....	5	.....	5
Dementia, secondary.....	9	4	13
Dementia, senile.....	3	6	9
Epilepsy.....	2	3	5
General paresis.....	14	1	15
Imbecility.....	3	.....	3
Locomotor ataxia.....	2	1	3
Paranoia.....	2	1	3
Total.....	87	86	173

*Statistical Tables.**Probable causes in those admitted.*

	Male.	Fe- male.	Total.
Heredity	11	10	21
Congenital	3	5	8
Intemperance	29	4	33
Injury to head.....	5	1	6
Worry	4	5	9
Overwork.....	2	1	3
Syphilis	3	.....	3
Masturbation	2	.....	2
Domestic trouble.....	1	3	4
La grippe	1	.....	1
Morphine habit.....	1	1	2
Disease of brain.....	1	2	3
Epilepsy	2	3	5
Insolation .....	.....	1	1
Spiritualism .....	.....	1	1
Menopause .....	.....	2	2
Pregnancy .....	.....	1	1
Lactation .....	.....	1	1
Puerpural state.....	.....	3	3
Uterine disease .....	.....	1	1
Unknown	22	41	63
Total	87	86	173

Statistical Tables.

Duration of insanity previous to admission.

	Male.	Fe- male.	Total.
One week or less.....	6	8	14
Two weeks.....	1	3	4
Three weeks.....	2	2	2
One month.....	2	2	4
Six weeks.....	1	1	2
Two months.....	4	5	9
Three months.....	2	4	6
Four months.....	1	.....	1
Five months.....	.....	3	3
Six months.....	1	2	3
Seven months.....	4	.....	4
Eight months.....	1	1	2
Nine months.....	1	.....	1
One year.....	10	2	12
Two years.....	17	7	24
Three years.....	5	4	9
Four years.....	8	2	10
Five years.....	3	8	11
Six years.....	2	3	5
Eight years.....	4	2	6
Nine years.....	.....	2	2
Ten years.....	1	4	5
Twelve years.....	3	1	4
Fourteen years.....	.....	1	1
Seventeen years.....	.....	1	1
Twenty years.....	.....	1	1
Congenital.....	1	2	3
Unknown.....	9	15	24
Total.....	87	86	173

*Statistical Tables.**Nativity of those admitted.*

	Male.	Fe- male.	Total.
United States.....	42	40	82
Germany	25	33	58
Ireland	4	2	6
Norway	2	2	4
Bohemia	3	1	4
Austria	2	1	3
Poland	3	.....	3
Canada	3	.....	3
Switzerland	1	1	2
Netherlands	1	1	2
Denmark	1	.....	1
Sweden .....	.....	1	1
England.....	.....	1	1
France .....	.....	1	1
Russia.....	.....	1	1
Iceland.....	.....	1	1
Total	87	86	173

*Statistical Tables.**Occupation of those admitted.*

	Male.	Female.	Total.		Male.	Female.	Total.
Laborer	12	.....	12	Stone mason.....	1	.....	1
Baker	5	.....	5	Book-binder.....	1	.....	1
Tailor	3	.....	3	Freight hauler.....	1	.....	1
Barber.....	3	.....	3	Musician.....	1	.....	1
Clerk.....	3	.....	3	Broom-maker	1	.....	1
Carpenter	3	.....	3	Brakeman.....	1	.....	1
Saloon-keeper	4	.....	4	Tanner	1	.....	1
Book-keeper	2	1	3	Cab-driver.....	1	.....	1
Teamster	2	.....	2	Chimney sweep.....	1	.....	1
Machinist.....	2	.....	2	Horse dealer	1	.....	1
Fireman	2	.....	2	Lake captain	1	.....	1
Merchant.....	2	.....	2	Blacksmith.....	1	.....	1
Music-teacher.....	2	.....	2	Physician.....	1	.....	1
Butcher.....	2	.....	2	Plumber.....	1	.....	1
Janitor.....	1	.....	1	Hat maker.....	1	.....	1
Driver.....	1	.....	1	Carriage trimmer.....	1	.....	1
Engineer.....	1	.....	1	Brewer.....	1	.....	1
Farmer.....	1	.....	1	House wife.....	.....	50	50
Coachman.....	2	.....	2	Domestic .....	.....	9	9
Draughtsman.....	1	.....	1	Teacher.....	.....	5	5
Bar-tender.....	1	.....	1	Seamstress .....	.....	3	3
Jeweler.....	1	.....	1	Sister .....	.....	2	2
Stone-cutter	1	.....	1	Peddler.....	.....	1	1
Factory-hand	1	.....	1	Chamber maid.....	.....	1	1
Newspaper agent.....	1	.....	1	Collector.....	.....	1	1
Steam-fitter.....	1	.....	1	Compositor.....	.....	1	1
Salesman.....	1	.....	1	Factory girl.....	.....	1	1
Brass polisher.....	1	.....	1	None.....	5	11	16
Sailor.....	1	.....	1				
Shoe maker.....	1	.....	1	Total	87	86	173
Express driver.....	1	.....	1				

*Statistical Tables.**Causes of death.*

	Male.	Female.	Total.
Exhaustion of acute mania		2	2
Exhaustion of chronic mania		1	1
Exhaustion of acute melancholia	1	1	2
Exhaustion of chronic melancholia	1	2	3
Exhaustion of primary dementia	1	.....	1
Exhaustion of secondary dementia	2	3	5
Exhaustion of senile dementia	1	5	6
Exhaustion of general paresis	8	2	10
Status epilepticus	1	.....	1
Locomotor ataxia	1	.....	1
Accident by train	1	.....	1
Suicide		1	1
Total	17	17	34

Statistical Tables.

STATISTICS

For the year ending September 30, 1898.

Table showing admissions and discharges during the year and the number under treatment September 30, 1898.

	Male.	Fe- male.	Total.
Remaining under treatment Sept. 30th, 1897.....	181	182	363
New admissions for the year.....	81	65	146
Re-admissions from parole, bond, etc.....	18	17	35
Whole number treated.....	280	264	544
Average number treated.....			380 ⁸⁶ ₃₈₆
Discharged recovered.....	30	15	45
Discharged improved.....	4	15	19
Discharged unimproved.....	13	4	17
Discharged not insane.....	2	.....	2
Transferred to county asylum for chronic insane...	9	1	10
Transferred to the home of the feeble minded.....	2	.....	2
Total discharged.....	60	35	95
Died.....	27	16	43
Remaining under treatment Sept. 30th, 1898.....	193	213	406

Form of mental disorder on admission.

	Male.	Fe- male.	Total.
Mania, acute.....	17	17	34
Mania, chronic.....	3	3	6
Mania, recurrent.....	1	1	2
Mania, puerpural.....	.....	3	3
Melancholia, acute.....	13	16	29
Melancholia, chronic.....	8	8	16
Dementia, primary.....	4	6	10
Dementia, secondary.....	6	2	8
Dementia, senile.....	7	7	14
Epilepsy.....	4	2	6
General paresis.....	14	.....	14
Paranoia.....	2	.....	2
Not insane.....	2	.....	2
Total.....	81	65	146

*Statistical Tables.**Probable causes in those admitted.*

	Male.	Female.	Total.
Alcoholism	9	.....	9
Unknown.....	33	31	64
Domestic affliction.....	2	5	7
Financial trouble	6	1	7
Loss of work.....	1	.....	1
Morphine habit.....	1	.....	1
Masturbation	3	.....	3
Sun stroke	1	.....	1
Poor health.....	1	.....	1
Over study.....	1	2	3
Over work.....	3	1	4
La grippe	1	.....	1
Morbid remorse.....	1	.....	1
Nervous prostration.....	1	.....	1
Injury to head.....	4	.....	4
Confinement to prison.....	1	.....	1
Sepsis.....	1	.....	1
Senility.....	1	2	3
Epilepsy.....	3	1	4
Cerebral Haemorrhage	1	1	2
Apoplexy.....	2	1	3
Injury.....	1	2	3
Spiritualistic meetings.....	.....	1	1
Venerial excesses .....	.....	1	1
Following an operation.....	.....	1	1
Menstrual trouble .....	.....	1	1
Puerperal .....	.....	1	1
Menopause.....	.....	1	1
Syphilis .....	.....	1	1
Anaemia.....	.....	1	1
Worry .....	.....	1	1
Erysipelas .....	.....	1	1
Ovarian disease.....	.....	1	1
Death in family.....	1	7	8
Not insane.....	2	.....	2
Total.....	81	65	146

*Statistical Tables.**Duration of insanity previous to admission.*

	Male.	Fe- male.	Total.
One week or less	7	9	16
Two weeks	3	2	5
Three weeks	1	1	2
One month	2	1	3
Five weeks	2	4	6
Six weeks	1	1	1
Two months	5	2	7
Three months	3	2	5
Four months	4	2	6
Five months	6	.....	6
Six months	3	2	5
Seven months	1	1	2
Eight months	2	.....	2
Ten months .....	.....	1	1
One year	5	4	9
Two years	8	6	14
Three years	6	5	11
Four years	5	2	7
Five years .....	.....	1	1
Six years .....	.....	1	1
Seven years	2	1	3
Eight years	1	.....	1
Ten years	2	3	5
Eleven years	2	.....	2
Twelve years	1	.....	1
Fourteen years .....	.....	1	1
Fifteen years .....	.....	1	1
Twenty years	1	.....	1
Unknown	7	12	19
Not insane	2	.....	2
Total	81	65	146

Statistical Tables.

Ages of those admitted.

	Male.	Fe- male.	Total.
Fifteen to twenty years.....		7	7
Twenty to twenty-five years.....	9	7	16
Twenty-five to thirty years.....	7	10	17
Thirty to thirty-five years.....	16	10	26
Thirty-five to forty years.....	16	13	29
Forty to forty-five years.....	11	6	17
Forty-five to fifty years.....	7	1	8
Fifty to fifty-five years.....	4	3	7
Fifty-five to sixty years.....		1	1
Sixty to sixty-five years.....	3		3
Sixty-five to seventy years.....	2	1	3
Seventy to seventy-five years.....	1	3	4
Seventy-five to eighty years.....	2	1	3
Eighty to eighty-five years.....	2	1	3
Eighty five to ninety.....		1	1
Not known.....	1		1
Total.....	81	65	146

Statistical Tables.

Occupation of those admitted.

	Male.	Female.	Total.		Male.	Female.	Total.
Florist	1	.....	1	Machinist	3	.....	3
Wagon maker	1	.....	1	Custom cutter	1	.....	1
Oil peddler	1	.....	1	Tailor	1	.....	1
Brewer	2	.....	2	Contractor	1	.....	1
Polisher	1	.....	1	Sailor	1	.....	1
Shoe cutter	1	.....	1	Cigarmaker	1	.....	1
Student	1	.....	1	Mason	1	.....	1
Railroad men	2	.....	2	Confectioner	1	1	2
Harnessmaker	1	.....	1	Druggist	2	.....	2
Dentist	1	.....	1	Brassworker	1	.....	1
Plumber	2	.....	2	Tanner	3	.....	3
Cobbler	1	.....	1	Expressman	1	.....	1
Boiler maker	1	.....	1	Shoemaker	1	.....	1
Salesman	2	.....	2	Photographer	1	.....	1
Lithographer	1	.....	1	Travelingman	1	.....	1
Well digger	1	.....	1	Coremaker	1	.....	1
Wire worker	1	.....	1	Deckhand	1	.....	1
Blacksmith	1	.....	1	Teacher .....	.....	2	2
Stone cutter	1	.....	1	Physician	1	.....	1
Draughtsman	1	.....	1	Seamstress .....	.....	1	1
Cooper	2	.....	2	Domestic .....	.....	11	11
Saloonkeeper	2	.....	2	House wife .....	.....	37	37
Laborer	7	.....	7	Housekeeper .....	.....	1	1
Painter	1	.....	1	None	4	6	10
Carpenter	5	.....	5	Nun .....	.....	1	1
Clerk	1	1	2	Missionary .....	.....	1	1
Watchmaker	1	.....	1	Scrubwoman .....	.....	1	1
Butcher	4	.....	4	Waitress .....	.....	1	1
Farmer	3	.....	3	Prostitute .....	.....	1	1
Miller	1	.....	1	Carsmith	1	.....	1
Teamster	1	.....	1				
Engineer	1	.....	1	Total	81	65	146

Statistical Tables.

Nationality of those admitted.

	Male.	Female.	Total.
United States.....	37	29	66
Germany.....	31	21	52
Ireland.....	3	5	8
Poland.....	1	2	3
Holland.....	1	.....	1
Austria.....	2	.....	2
Bohemia.....	3	1	4
Switzerland.....	.....	1	1
Scotland.....	.....	1	1
Denmark.....	.....	2	2
England.....	1	.....	1
Bavaria.....	.....	2	2
Wales.....	2	1	3
Total.....	81	65	146

*Statistical Tables.**Causes of death.*

	Male.	Female.	Total.
Exhaustion of acute mania	1	1	2
Exhaustion of chronic melancholia	2	1	3
Exhaustion of secondary dementia	2	.....	2
Exhaustion of senile dementia	5	3	8
Exhaustion of general paresis	7	.....	7
Exhaustion of puerperal mania .....	.....	1	1
Apoplexy in the course of general paresis	2	.....	2
Aortic insufficiency in the course of acute melancholia	1	.....	1
Aortic insufficiency in the course of chronic melancholia	1	.....	1
General miliary tuberculosis in the course of acute melancholia	1	.....	1
Tuberculosis in the course of chronic melancholia	1	.....	1
Chronic diffuse nephritis in the course of general paresis	2	.....	2
Chronic diffuse nephritis in the course of chronic melancholia .....	.....	1	1
Pneumonia in the course of epilepsy	1	.....	1
Status epilepticus	1	.....	1
Exhaustive diarrhoea in the course of acute melancholia .....	.....	1	1
Exhaustive diarrhoea in the course of chronic melancholia .....	.....	1	1
Exhaustion of locomotor ataxia .....	.....	1	1
Croupous pneumonia in the course of acute mania .....	.....	1	1
Cerebral effusion in the course of chronic mania .....	.....	1	1
Tuberculosis pulmonalis in the course of chronic mania .....	.....	1	1
Catarrh of the bile duct in the course of chronic mania .....	.....	1	1
Erysipelas in the course of chronic melancholia .....	.....	1	1
Total	27	16	43

Itemized Statement of Cost, 1898.

ITEMIZED STATEMENT OF COST

Of all articles purchased for Milwaukee Hospital for Insane during the fiscal year ending September 30, 1898.

Articles.	Quantity.	Average price.	Amount.
Amusements, miscellaneous			\$14 45
Alcohol	19¾ gallons	\$2 29	45 24
Aluminum cups, medicine	1 gross		7 20
Axes	1¼ dozen	8 80	11 00
Axe handles	½ dozen	2 50	1 25
Abstract of title, Kelly tract	1		25 00
Awning canvass	13 yards	16	2 08
Awning braid	¼ gross	1 50	38
Alcohol lamps	2	15	30
Apples, green	225½ bushels	37½	84 51
Apples, green	12 barrels	3 54 ¹ / ₆	42 50
Apples, dried	4,047 pounds	05 ⁴ / ₃₁	207 58
Apricots	938 pounds	06 ⁴ / ₅	63 80
Almond paste	40 pounds	27	10 80
Ammonia	17 pounds	10 ⁵ / ₈	1 80
Billiard balls	1 set		10 00
Billiard cue tips	1 box		1 15
Billiard cue chalk	3 dozen	081 ¹ / ₃	25
Base balls	10	87½	8 75
Bats	11	54 ⁶ / ₁₁	6 00
Bass strings	3	1 02	3 05
Bass bow, repairing	1		75
Brushes, paint	57	45 ⁹ / ₁₇	25 95
Brushes, whitewash	22	1 40 ¹ / ₁₁	30 82
Brick, fire	500	4	20 00
Bolts	25½ dozen	10 ³ / ₇	2 66
Bake oven	⅓ on \$750 00		250 00
Butts	14 pairs	06	70
Blind staples	2 pounds	081 ¹ / ₂	17
Blank books	49	1 48 ³ / ₈	72 70
Brandy	4 bottles	1 69	6 75
Beer	9 cases	1 06 ³ / ₄	9 60
Beer, root	3¾ dozen	1 77	6 64
Bandages			13 15
Boilers, insurance			45 00
Boilers, Hawley tubes and bush'gs	62	2 00	124 00
Boilers, repairing			69 89
Boiler compound	1,575 pounds	07½	118 13
Barn repairs			202 89
Budding knife	1		75
Binding twine	290 pounds	09 ¹ / ₁₁	27 90
Baskets	⅓ dozen	2 50	83
Batts, cotton	2 cases	4 47½	8 95

Itemized Statement of Cost, 1898.

Articles.	Quantity.	Average price.	Amount.
Blankets.....	149	\$1 60 $\frac{1}{4}$	\$238 72
Bed spreads.....	38	93 $\frac{1}{4}$	35 40
Brooms, whisk.....	2 dozen	2 25	4 50
Brushes, shoe.....	2 dozen	1 52 $\frac{1}{2}$	3 05
Brushes, clothes.....	2	82 $\frac{1}{2}$	1 65
Brushes, tooth.....	2 dozen	48 $\frac{1}{2}$	97
Brushes, scrub.....	2 dozen	1 75	3 50
Brushes, shaving.....	1 dozen	.....	1 75
Brushes, floor.....	$\frac{1}{2}$ dozen	9 00	4 50
Brushes, hair.....	2 dozen	5 15	10 50
Brushes, bath.....	1 dozen	.....	6 76
Bench legs.....	48	25	12 00
Bench ends.....	73	1 46 $\frac{1}{15}$	106 62
Bedsteads.....	4	5 00	20 00
Bed castors.....	18 sets	28 $\frac{1}{3}$	5 10
Bed spring.....	1	.....	11 00
Bath brick.....	3 dozen	73 $\frac{1}{3}$	2 20
Bluing.....	6 pounds	26 $\frac{1}{4}$	1 57
Bleach.....	273 pounds	06 $\frac{2}{3}$	17 88
Badges.....	1	.....	50
Bunting.....	75 yards	03	2 25
Bananas.....	7 bunches	1 03 $\frac{1}{4}$	7 25
Blueberries.....	5 cases	1 55	7 75
Blueberries.....	24 baskets	81 $\frac{1}{4}$	19 50
Blackberries.....	9 cases	90	8 10
Baking powder.....	75 pounds	19 $\frac{2}{3}$	29 55
Butter.....	15,979 pounds	19 $\frac{1}{2}$ $\frac{3}{8}$	3,151 30
Beef.....	101,165 pounds	06 $\frac{1}{1000}$ $\frac{2}{8}$	6,805 94
Beef tongues.....	26	29 $\frac{1}{2}$	7 65
Bone marrow.....	$\frac{1}{2}$ dozen	4 00	2 00
Beans, navy.....	31 $\frac{1}{15}$ bushels	1 18 $\frac{1}{2}$	36 81
Beans, lima.....	1 peck	.....	25
Bacon.....	13 cans	26 $\frac{1}{3}$	2 65
Beef casings.....	6 set	49 $\frac{1}{3}$	2 96
Bay leaves.....	1 pound	.....	08
Buttons.....	47 $\frac{1}{2}$ gross	37 $\frac{1}{2}$	17 80
Boots.....	4 dozen	23 45	93 80
Boots, rubber.....	4 pairs	2 98 $\frac{3}{4}$	11 95
Broom corn.....	1,346 pounds	04	53 84
Broom wire.....	101 $\frac{1}{4}$ pounds	04 $\frac{3}{4}$	4 79
Broom tacks.....	1 dozen	.....	21
Broom twine.....	41 $\frac{3}{4}$ pounds	28	11 67
Broom needles.....	8	155 $\frac{3}{8}$	1 25
Broom sockets.....	2 gross	50	1 00
Broom handles.....	100	01 $\frac{1}{5}$	1 20
Brush bucks.....	33 dozen	45 $\frac{1}{2}$	15 03
Bench shears.....	1 pair	.....	11 00
Christmas trees.....	3	1 42	4 25
Christmas tree trimmings.....	.....	.....	14 57
Checker boards.....	1 nest	.....	1 00
Croquet.....	1 set	.....	1 75
Cement.....	16 $\frac{1}{2}$ barrels	2 43	40 10
Chimney, extension.....	25 feet	.....	275 00
Corks.....	12 $\frac{1}{2}$ gross	29 $\frac{1}{4}$	3 66
Cylinder oil.....	252 gallons	43	108 35

Itemized Statement of Cost, 1898.

Articles.	Quantity.	Average price.	Amount.
Ceiling fan motor	1	.....	\$10 72
Coal, soft.....	2,432 ^{60.00} / _{20.00} tons	\$2 78 ¹ / ₄	6,764 91
Coal, hard.....	139 ^{85.00} / _{20.00} tons	5 62 ¹ / ₄	783 85
Charcoal.....	10 bushels	15	1 50
Curry comb.....	1	.....	25
Cows.....	7	51 29	359 00
Chickens, live.....	250	35 ¹ / ₂	88 36
Chicken feed.....	99 bushels	65 ³ / ₈	64 57
Corn.....	344 bushels	33 ¹ / ₂	115 13
Cultivator.....	1	.....	27 00
Corn cutting.....	34 acres	1 00	34 00
Court cost, sheriff and lawyer's fees, obtaining injunction .....	.....	.....	157 70
Carriage sponges.....	3	60	1 80
Chamois skins.....	2	75	1 50
Cushion.....	1	.....	1 50
Carpet sweepers, repairing	3	75	2 25
Carpet sweepers.....	1	.....	2 75
Crockery.....	.....	.....	262 24
Clocks.....	2	1 25	2 50
Clocks, repairing.....	.....	.....	5 65
Combs.....	29 dozen	94 ¹ / ₄	27 34
Chambers.....	18 dozen	5 40	97 20
Curtain goods.....	528 ³ / ₄ yards	14 ¹ / ₄	74 92
Curtain cord.....	3 pieces	1 15 ³ / ₈	3 46
Curtain rods.....	242 feet	03 ¹ / ₁₀	7 50
Curtain loops.....	5 pairs	11	55
Curtain pins.....	6 dozen	03	18
Curtain rings.....	6 dozen	11	66
Curtain brackets.....	53 pairs	06 ¹ / ₂	3 67
Curtains.....	4 ¹ / ₂ pairs	4 99	22 45
Chairs.....	8	3 49 ³ / ₈	27 95
Chairs.....	4 dozen	7 12 ¹ / ₂	28 50
Couch covers.....	3	1 85 ¹ / ₃	5 56
Commode chair.....	1	.....	3 33
Cabinet, oak.....	1	.....	18 00
Cockroach paste.....	8 boxes	87 ¹ / ₂	7 00
Cockroach paste.....	10 pounds	75	7 50
Coffee pots.....	2	1 27 ¹ / ₂	2 55
Clothes lines.....	2	18	36
Caustic soda.....	2,134 pounds	02 ⁶ / ₁₃	52 64
Collar and cuff machine roll.....	1	.....	30 00
Clothes pins.....	1 box	.....	50
Candles.....	80 pounds	08 ³ / ₈	6 70
Cigar lighter.....	1	.....	1 00
Collections.....	.....	.....	3 00
Car fares.....	.....	.....	37 15
Cigars.....	75	07 ¹ / ₃	5 50
Cranberries.....	1 barrel	.....	6 25
Cranberries.....	1 peck	.....	1 20
Cheese.....	209 ¹ / ₂ pounds	10 ² / ₇	21 51
Crackers.....	228 ³ / ₄ pounds	09 ¹ / ₅	21 04
Coffee, Rio.....	4,948 pounds	14 ⁶ / ₂₅	704 34
Coffee, Java.....	691 pounds	34 ¹⁰ / ₁₀	241 15
Corn meal.....	23 ¹ / ₃ barrels	00	70 98

Itemized Statement of Cost, 1898.

Articles.	Quantity.	Average price.	Amount.
Citron.....	10 pounds	\$ 13	\$1 30
Cider.....	7 gallons	25	1 75
Currants.....	405 pounds	08 $\frac{1}{7}$	32 63
Cabbage.....	4 crates	90	3 60
Cucumbers.....	19 dozen	52 $\frac{1}{4}$	9 93
Cucumbers.....	1 crate	.....	1 50
Cherries.....	3 cases	90	2 70
Cherries.....	2 bushels	1 50	3 00
Chocolate.....	60 pounds	33 $\frac{1}{5}$	19 92
Corn, canned.....	16 $\frac{2}{3}$ dozen	1 02 $\frac{1}{6}$	17 03
Corn, popped.....	265 pounds	01 $\frac{7}{10}$	4 48
Corn starch.....	240 pounds	05 $\frac{3}{8}$	13 40
Candy, mixed.....	200 pounds	06	12 00
Clam chowder.....	2 dozen	2 25	4 50
Cloves.....	10 pounds	09 $\frac{3}{4}$	98
Cinnamon.....	60 $\frac{1}{2}$ pounds	22 $\frac{2}{10}$	13 45
Caraway seed.....	7 pounds	08 $\frac{1}{7}$	57
Crepe.....	2 yards	08	16
Cambric.....	632 yards	06	37 88
Cheviot.....	477 yards	10 $\frac{1}{3}$	49 29
Cheese cloth.....	110 $\frac{1}{2}$ yards	03	3 31
Capes.....	6	3 50	21 00
Clothing, miscellaneous.....	.....	.....	76 84
Caps.....	6 $\frac{1}{6}$ dozen	4 62	28 50
Coat, rubber.....	1	.....	2 00
Carpet, scrap.....	1, 210 pounds	07	84 70
Carpet, warp, chained.....	74 $\frac{1}{4}$ pounds	19 $\frac{3}{8}$	14 59
Drain pipe.....	352 feet	07 $\frac{3}{8}$	27 54
Drain pipe Y's.....	24 pieces	30	7 20
Drain pipe T's.....	12 pieces	36	4 32
Door hangers.....	10 set	2 00	20 00
Door track.....	54 feet	20	10 80
Door springs.....	$\frac{1}{2}$ dozen	1 60	80
Door bolts.....	1 $\frac{1}{6}$ dozen	1 07	1 24
Dampers, centre building.....	.....	.....	16 00
Doors.....	6	2 81	16 85
Door sills.....	1	.....	1 50
Drugs and medicines.....	.....	.....	782 44
Duck, water proof.....	153 yards	46 $\frac{3}{4}$	71 50
Dusters.....	1 $\frac{1}{2}$ dozen	3 39	3 68
Dust pans.....	4 dozen	1 32 $\frac{1}{2}$	5 30
Dripping pans.....	1 dozen	.....	10 00
Dish pans.....	2 $\frac{1}{6}$ dozen	10 77 $\frac{1}{4}$	23 34
Drinking cups.....	9 dozen	47 $\frac{2}{3}$	4 29
Doylies.....	2 dozen	1 44	2 88
Dynamo oil.....	307 gallons	34 $\frac{1}{4}$	105 46
Denim.....	258 $\frac{1}{2}$ yards	11 $\frac{1}{4}$	29 07
Drill.....	22 $\frac{1}{2}$ yards	21 $\frac{1}{2}$	4 77
Duck.....	105 yards	10 $\frac{1}{5}$	10 71
Dress goods.....	167 yards	06 $\frac{3}{8}$	10 47
Dowels.....	240 feet	01	2 40
Electric bells and repairing.....	.....	.....	22 10
Elevators, repairing.....	.....	.....	20 11
Electric door locks.....	3	4 00	12 00

Itemized Statement of Cost, 1898.

Articles.	Quantity.	Average price.	Amount.
Escutcheons	1 dozen	.....	\$2 26
Envelopes.....	6½ M.	\$1 21	7 87
Electric batteries, repairing .....	.....	.....	6 72
Engines, repairings.....	.....	.....	7 55
Excelsior	150 pounds	00 ³ / ₃	1 15
Electric lights, supplies and labor .....	.....	.....	433 86
Electric lamps	100	22 ¹ / ₄	22 25
Electric lamps and fixtures.....	1	.....	22 32
Express charges .....	.....	.....	73 18
Extracts, lemon.....	8 pounds	82	6 55
Extracts, vanilla.....	2 pounds	1 25	2 50
Eggs	3,472 dozen	15 ¹ / ₃₀	521 96
Fire clay	2 barrels	1 75	3 50
Fire extinguishers, repairing .....	.....	.....	20 50
Fly nets.....	8	1 39	11 12
Fly nets, repairing.....	.....	.....	1 13
Forks	1 dozen	.....	6 15
Farm machinery and tools, repair- ing .....	.....	.....	68 09
Feed cutting.....	9½ days	5 00	47 50
Farmers bailers, repairing.....	.....	.....	16 13
Flower pots	1 doz	.....	1 00
Fence wire.....	300 pounds	01 ⁷ / ₁₀	5 10
Fence wire staples.....	14 pounds	04 ³ / ₄	51
Fringe.....	22 yards	12 ¹ / ₂	2 75
Furniture, repairing .....	.....	.....	47 69
Furniture, oriental room .....	.....	.....	36 10
Fruit jar tops.....	10 dozen	85	8 50
Felt	2 ² / ₃ yards	52 ⁵ / ₆	1 67
Flags.....	1¼ gross	4 63	5 78
Fish, fresh.....	3,348 pounds	07 ¹ / ₃	253 01
Fish, salt.....	48 half barrels	6 00	288 00
Fish, cod	200 pounds	04 ⁵ / ₈	9 25
Fish, herrings	2 barrels	11 57	23 13
Frogs' legs.....	1 pound	.....	40
Flour, spring wheat.....	587 barrels	4 98 ³ / ₁₁	2,924 39
Flour, winter wheat.....	29 barrels	5 23 ¹ / ₄	151 75
Flour, rye	39 barrels	3 78 ³ / ₄	147 70
Flour, graham	22 barrels	4 94 ³ / ₄	108 85
Flour, buckwheat.....	1½ barrels	4 17	6 25
Figs.....	5½ pounds	22	1 21
Flannel	1,267 yards	07 ¹ / ₃	100 39
Flats, ladies'.....	6 ¹ / ₁₂ dozen	2 76	18 14
Games.....	7	18 ² / ₃	1 28
Glue	49 pounds	14 ² / ₃	7 15
Glazier points.....	1 packages	06 ¹ / ₂	13
Grind-stone	1	.....	2 25
Grass hooks	2	30	60
Ground feed	106 ¹ / ₂ ⁷⁴⁹ / ₂₀₀₀ tons	12 26	1,310 26
Greenhouse, repairing.....	.....	.....	90
Grommets	4 gross	1 25	5 00
Glassware .....	.....	.....	52 (9
Grass seats	1 dozen	.....	1 29

Itemized Statement of Cost, 1898.

Articles.	Quantity.	Average price.	Amount.
Grapes	28 baskets.	125 ⁵ / ₈	\$3 53
Grapes	3 crates	1 48 ¹ / ₃	4 45
Gelatine	2 dozen	1 66 ¹ / ₂	3 35
Ginger	35 pounds	15	5 25
Gingham	921 yards	08 ⁵ / ₇	76 36
Gloves	1 pair	.....	1 88
Hinges	4 ³ / ₈ dozen	60 ³ / ₈	2 93
Hose pipe	338 feet	14 ⁷ / ₈	50 25
Horse blankets	7	2 35	16 45
Horse blankets, repairing .....	.....	.....	2 50
Horse clippers	1	.....	1 85
Horse brush	1	.....	40
Hay rack	1	.....	10 32
Hoes	1 dozen	.....	4 20
Hay	40 ¹ / ₂ tons	7 91 ¹ / ₃	322 81
Hay, standing grass	2 lots	25 00	50 00
Horse, coach	1	.....	265 00
Horse medicine .....	.....	.....	9 60
Horses, medical services and medicines .....	.....	.....	72 00
Horse shoeing .....	.....	.....	197 07
Harness, double	1	.....	45 00
Harness, bridle and reins	1	.....	15 00
Harness saddle	1	.....	18 00
Harnesses, repairing .....	.....	.....	100 50
Harness oil	2 gallons	1 00	2 00
Harness polish	10 cans	41	4 10
Horse boots	1 pair	.....	75
Hardware .....	.....	.....	52 18
Hair clippers	2	2 88	5 75
Hair clippers, grinding and repairing .....	.....	.....	7 55
Hampers	5	2 68	13 40
Ham	27 ¹ / ₄ pounds	11	3 00
Ham and bacon, smoking .....	.....	.....	43 02
Horse radish	1 gallon	.....	75
Horse radish root	52 pounds	05	2 60
Hoods, ladies'	3 ¹ / ₂ pounds	4 70	14 48
Hats, felt	6 dozen	9 00	36 00
Hats, straw	6 dozen	1 75	10 50
Hats, rubber	2	1 07 ¹ / ₂	2 15
Handkerchiefs	1 dozen	.....	60
Hose, ladies'	5 pairs	25	1 25
Iron	42 pounds	03 ² / ₃	1 54
Iron brackets	5 ¹ / ₂ dozen	2 99	16 45
Iron staples	3 dozen	10	30
Iron pulls	1 ¹ / ₂ dozen	43 ¹ / ₃	65
Iron hooks	6 ² / ₃ dozen	31	2 06
Iron rail	2176 pounds	@ 15 00	.....
Iron washers	2 ¹ / ₂ pounds	gro. ton	14 58
Ink	13 quarts	06 ¹ / ₂	13
Ink	3 bottles	54 ² / ₃	7 10
Ink .....	.....	40	1 20
Insect powder	1/4 pound	40	10
Ice cream	20 gallons	1 00	20 00

Itemized Statement of Cost, 1898.

Articles.	Quantity.	Average price.	Amount.
India linen	24 yards	\$ 10	\$2 39
Jackets, ladies'	2	3 50	7 00
Jumpers	4 dozen	6 75	27 00
Keys	7½ dozen	3 68	27 60
Knobs	½ dozen	2 00	1 00
Kettles	t	99½	5 95
Kettles, repairing			41 35
Kitchen utensils, miscellaneous			9 93
Kitchen knives	3½ dozen	1 26⅓	4 00
Knives and forks, carving	2 sets	2 02½	4 05
Kerosene oil	59 gallons	08	4 72
Knitting cotton	157½ pounds	17	26 78
Lawn tennis balls	½ dozen	4 20	2 10
Locks	5¼ dozen	4 04	21 19
Locks, altering, repairing			27 35
Linseed oil	243¼ gallons	39⅓	95 91
Lumber	31,734 feet	22 95	728 13
Lime	17 barrels	58¼	9 90
Lead pencils	16 dozen	40⅝	6 50
Library	2 volumes	5 50	11 00
Labels	10 boxes	36	3 60
Lath yarn	16 pounds	12	1 92
Lace	2 pieces	40	80
Linen floss	1 dozen		85
Laundry truck tub	1		14 00
Laundry tubs	1 dozen		7 25
Laundry tubs, repairing			80
Laundry truck baskets	2	10 00	20 00
Laundry baskets	1 dozen		21 00
Laundry soap	6,062 pounds	03	181 86
Laundry soap	57 boxes	2 49⅝	142 25
Lantern globes	1½ dozen	83⅓	1 25
Lanterns	2 dozen	84	1 68
Lamp wick	3¼ yards	02¾	08
Lemons	12 boxes	4 74	56 85
Lard	3,186 pounds	06½	203 89
Lettuce	16¾ dozen	37⅓	6 25
Lamb	6,004 pounds	10⅝	629 41
Lemon peel	3 pounds	12	36
Lawn	219 yards	07	15 32
Music and entertainments			108 36
Mouth organs	4	28	1 12
Mouldings	3,175 feet	11 22	35 60
Memorandum books	2½ dozen	1 28	3 30
Magazines and periodicals	27	2 71⅓	73 25
Medicine tray	1		4 20
Manure hook	1		50
Manure			43 40
Matting	145⅓ yards	40½	58 38
Mosquito netting	34 pieces	35⅓	12 02
Mattress hair	130 pounds	34⅓	44 50
Moss	2,353 pounds	07	164 71

Itemized Statement of Cost, 1898.

Articles.	Quantity.	Average price.	Amount.
Mat, rubber.....	1	.....	\$3 50
Matting, rubber.....	39 $\frac{1}{4}$ pounds	\$ 15 $\frac{1}{2}$	6 10
Mats, steel.....	18	1 50	27 00
Mops	8 dozen	73 $\frac{1}{8}$	5 85
Marking ink.....	2 bottles	10 50	21 00
Marking pens.....	8 dozen	13 $\frac{3}{4}$	1 10
Mirrors	26	57 $\frac{1}{2}$	14 83
Mangle, repairing.....	.....	.....	14 63
Matches.....	18 gross	70 $\frac{1}{3}$	12 65
Mackerel	1 kit	.....	2 75
Meals	3	50	1 50
Macaroni	25 pounds	09 $\frac{1}{2}$	2 38
Melons	21 crates	91	19 10
Melons	109	12 $\frac{1}{2}$	13 26
Mutton.....	24,363 pounds	05	1,218 15
Molasses	33 gallons	31 $\frac{9}{11}$	10 50
Milk.....	4 cans	1 00	4 00
Mustard.....	113 pounds	18 $\frac{5}{8}$	20 94
Mustard seed.....	20 pounds	07 $\frac{3}{4}$	1 55
Mustard.....	1 dozen	.....	1 75
Mint	9 bunches	20	1 80
Mace	3 $\frac{1}{4}$ pounds	58 $\frac{1}{2}$	1 90
Muslin, brown.....	1,266 yards	04 $\frac{9}{10}$	61 97
Mittens, men's.....	6 dozen pairs	4 50	27 00
Mittens, ladie's.....	1 pair	.....	25
Mattress needles.....	2 $\frac{1}{2}$ dozen	1 28	3 20
Nails.....	11 kegs	1 64	18 00
Nails.....	28 pounds	06 $\frac{1}{2}$	1 83
Needles, sewing.....	3 M.	1 34	4 01
Needles, darning.....	1 gross	.....	55
Needles, knitting.....	1 package	.....	25
Napkins.....	5 dozen	4 26	21 30
Nuts, mixed.....	65 pounds	12 $\frac{1}{2}$	8 13
Nuts, cocoa.....	6	04	24
Oats.....	668 $\frac{5}{2}$ bushels	32 $\frac{1}{8}$	214 64
Oak lumber.....	200 feet	06	12 00
Oak lumber quarter sawed.....	150 feet	10	15 00
Office stool.....	1	.....	50
Oil cloth.....	4 pieces	1 73 $\frac{1}{4}$	6 93
Olives	1 $\frac{1}{2}$ dozen	6 23 $\frac{1}{3}$	6 75
Olive oil.....	3 gallons	3 00	9 00
Olive oil.....	1 $\frac{1}{2}$ dozen	8 60	4 30
Oat meal.....	25 $\frac{1}{3}$ barrels	3 74 $\frac{1}{3}$	94 90
Oranges.....	7 boxes	3 20	22 40
Oranges.....	3 dozen	38 $\frac{1}{3}$	1 15
Oysters.....	222 cans	33 $\frac{3}{10}$	73 92
Oysters.....	51 $\frac{3}{4}$ gallons	1 00	51 45
Oysters, shell.....	150	01	1 50
Overalls	6 dozen	6 76	40 50
Overcoats	22	7 00	154 00
Piano, tuning.....	.....	.....	5 50
Putty, knives.....	3	25	75

Itemized Statement of Cost, 1898.

Articles.	Quantity.	Average price.	Amount.
Posts.....	10	\$ 15	\$1 50
Porch.....	1	.....	49 80
Plaster.....	200 pounds	40	80
Plastering, hair.....	5 bushels	32	1 60
Plumbing, labor.....	9 $\frac{7}{10}$ months	60 00	554 00
Pipe and fitting.....	.....	.....	1,404 22
Pipe covering.....	.....	.....	167 33
Paints.....	.....	.....	144 14
Putty.....	111 pounds	02 $\frac{1}{2}$	2 78
Printing.....	.....	.....	74 70
Pens.....	7 gross	1 17 $\frac{2}{7}$	8 21
Pens, shading.....	10	11 $\frac{1}{2}$	1 15
Pen and holder.....	1	.....	2 50
Penholders.....	2 dozen	50	1 00
Paper fasteners.....	2 boxes	15	30
Paper.....	3 $\frac{1}{4}$ reams	1 34	4 36
Paper.....	16 $\frac{1}{4}$ quires	27 $\frac{3}{4}$	4 65
Paper, pads.....	27 dozen	21	5 67
Paper, blotters.....	2 gross	55	1 10
Papers, powder.....	8 packages	17	1 36
Paper, filter.....	3 packages	38 $\frac{2}{3}$	1 16
Pill and powder boxes.....	5 $\frac{7}{12}$ gross	71 $\frac{1}{2}$	3 99
Pump.....	1	.....	6 50
Paris green.....	30 pounds	19 $\frac{1}{2}$	5 85
Plants and trees.....	.....	.....	94 21
Pillows.....	4	54	2 15
Pins.....	20 packages	16 $\frac{2}{7}$	3 31
Polish.....	2 bottles	10	20
Paper, toilet.....	9 cases	3 29	29 60
Paper, fly.....	3 cases	2 55	7 65
Paper, shelf.....	5 gross	25	1 25
Paper, tissue.....	11 rolls	14 $\frac{1}{5}$	1 56
Paper bags.....	12 packages	10	1 20
Potato steamers.....	4	2 54	10 15
Pails.....	13 dozen	1 60 $\frac{1}{2}$	28 85
Postage.....	.....	.....	76 00
Patients' expenses.....	.....	.....	288 58
Photographing engine room.....	.....	.....	1 00
Pipes.....	7 boxes	1 53	10 70
Peanuts.....	256 bags	02 $\frac{1}{2}$	6 40
Pipes.....	3 dozen	2 00	6 00
Poultry.....	3,050 pounds	12 $\frac{3}{5}$	384 24
Pigeons.....	3	16	48
Potatoes, sweet.....	2 barrels	3 00	6 00
Potatoes.....	1,415 $\frac{3}{4}$ bushels	47 $\frac{5}{16}$	669 83
Peaches.....	4 boxes	90	3 60
Peaches.....	7 crates	1 31	9 15
Peaches.....	51 baskets	32 $\frac{2}{5}$	16 63
Pears.....	7 $\frac{1}{2}$ bushels	1 00	7 50
Prunes.....	7,618 pounds	06 $\frac{1}{28}$	459 78
Plums.....	3 cases	1 41 $\frac{2}{3}$	4 25
Plums.....	3 bushels	75	2 25
Peas, canned.....	14 dozen	1 57 $\frac{1}{7}$	22 00
Peas, green.....	1 box	.....	1 50
Pickles, chow chow.....	1 $\frac{7}{12}$ dozen	5 86	9 28
Pepper.....	115 pounds	14 $\frac{2}{3}$	16 88

Itemized Statement of Cost, 1898.

Articles.	Quantity.	Average price.	Amount.
Prints	2,064 yards	\$. 08 $\frac{1}{2}$ ₀	\$166 12
Pants	84 pairs	2 53	212 50
Quails	3 $\frac{1}{2}$ dozen	2 02	6 40
Radiators	7	6 14 $\frac{2}{7}$	43 00
Range	1		147 00
Ranges, repairing			80 27
Repairs, miscellaneous			391 17
Rubber bands	5 $\frac{1}{4}$ gross	1 08 $\frac{2}{7}$	5 69
Rivets and burrs	1 box		15
Rakes	1 dozen		2 00
Rope	54 pounds	07 $\frac{7}{8}$	4 25
Rubber apron	1		1 60
Rugs	25	3 89	97 25
Ratline	20 pounds	12	2 40
Ribbon	3 yards	15	45
Refrigerator	1		12 50
Rockers	4	1 94	7 75
Rice boilers	2	61	1 22
Razors	5	1 45	7 25
Razor strops	$\frac{7}{12}$ dozen	3 43	2 00
Razor handle	1		25
Rolling pin	1		10
Raspberries	16 cases	1 14 $\frac{3}{8}$	18 30
Rice	1,723 pounds	05 $\frac{3}{11}$	90 82
Raisins	500 pounds	04 $\frac{1}{2}$ ₀	24 75
Raisins	6 boxes	1 86	11 15
Rhubarb	1 box		75
Rubbers, ladies'	76 pairs	37 $\frac{5}{8}$	28 59
Rice root	241 $\frac{1}{2}$ pounds	17 $\frac{3}{4}$	42 83
Reed	26 pounds	25	6 50
Striking bag and inflator	1		3 50
Shingles	18 M.	2 40	43 20
Stucco	3 barrels	1 58 $\frac{1}{3}$	4 75
Storm sashes	4	2 50	10 00
Stones	4	2 70	10 80
Screws	41 gross	13	5 30
Sand paper	43 $\frac{3}{4}$ quires	15	6 53
Sand screen	1		2 50
Stationery, miscellaneous			8 84
Surgeon's bag	1		2 00
Sponges	1 $\frac{1}{2}$ dozen	1 75	1 90
Surgical instruments, miscellaneous			49 47
Scule, drug	1		6 40
Shovels	1 dozen		7 00
Scoops	1 dozen		11 40
Snow shovel	1		40
Scythe stones	3	08	24
Stone boat	1		3 25
Stabling horses			53 50
Seeds			296 87
Sleighs, repairing			10 25
Straw	14 $\frac{10}{2000}$ tons	6 40	92 75

Itemized Statement of Cost, 1898.

Articles.	Quantity.	Average price.	Amount.
Sheeting, brown	1,150½ yards	\$ 10 ² / ₁₁	\$117 02
Sheeting, bleached.....	466¾ yards	09 ⁷ / ₇	42 64
Shading	153½ yards	13 ¹ / ₇	20 65
Screen.....	1		1 10
Sideboard	1		35 15
Sanitas.....	36 gallons	1 17 ¹ / ₃	42 25
Sulphur	700 pounds	01 ¹ / ₁₂	13 39
Scale	1		10 00
Spittoons.....	3 dozen	3 60	10 80
Spoons, table	1 gross		6 00
Spoons, tea.....	1 ² / ₃ gross	11 98	19 96
Sewing machine.....	1		25 00
Sewing machine, repairing.....	.....		3 50
Sand soap.....	20 boxes	2 28 ¹ / ₂	45 70
Scissors.....	½ dozen	3 00	1 50
Shoe blacking.....	3 dozen	50	1 50
Shoe buckles and straps.....	1 dozen		9 00
Steam tables.....	2	10 87	21 74
Soup pails.....	4	1 32 ¹ / ₄	5 29
Sink buckets, galvanized iron wire.....	16	2 00	32 00
Starch.....	1,697 pounds	04	67 89
Sal soda.....	9,734 pounds	00 ³ / ₅ ⁷ / ₀	72 10
Sad irons, electric.....	3	8 17	24 50
Sad irons, repairing.....	.....		1 37
Sprinklers, automatic.....	2	3 65	7 29
Spectacles	2 dozen	1 25	2 50
Spectacles, repairing.....	.....		1 15
Strawberries.....	22 cases	2 14 ¹ / ₃	47 50
Sardines	14 cans	20 ⁴ / ₅	2 92
Sausages.....	1,371 pounds	08 ¹ / ₃	114 16
Syrup.....	915 gallons	16 ² / ₅ ⁰ / ₀	147 77
Syrup, maple.....	19½ gallons	1 25	24 38
Sugar, granulated.....	15,292 pounds	05 ⁹ / ₂ ⁰ / ₀	833 39
Sugar, C.....	5,281 pounds	04 ³ / ₅	242 90
Sugar, cut loaf.....	330 pounds	06 ³ / ₃	19 90
Sugar, powdered.....	424 pounds	05 ¹ / ₀	24 98
Sauce.....	2 bottles	25	50
Salt, Ashton.....	3 sacks	2 51 ² / ₃	7 55
Salt, common.....	33 barrels	89 ² / ₅	29 50
Salt peter.....	66 pounds	10 ⁵ / ₁₅	6 80
Squash, canned.....	2 dozen	85	1 70
Saleratus.....	60 pounds	05	3 00
Silisia.....	66½ yards	07 ⁵ / ₅	5 04
Shawls.....	18	2 00	36 00
Socks, men's Alaska.....	1 dozen		2 00
Suspenders.....	12 dozen	2 13	25 55
Shirts.....	12 ² / ₃ dozen	4 86	61 50
Suits.....	81	6 36 ¹ / ₂	515 50
Slippers, ladies'.....	5 pairs	1 09	5 44
Slippers, men's.....	84 pairs	92 ⁷ / ₇	77 40
Shoes, ladies'.....	111 pairs	1 30 ¹ / ₆	144 44
Shoes, men's.....	78 pairs	1 46 ⁵ / ₅	114 30
Shoes, men's over.....	37 pairs	1 02 ² / ₈	37 96
Shoes, repairing.....	.....		21 65

Itemized Statement of Cost, 1898.

Articles.	Quantity.	Average price.	Amount.
Silk.....	9 spools	\$ 05	\$ 45
Salaries and wages.....	12 months	2,035 91	24,430 91
Turpentine.....	399 gallons	33 $\frac{3}{20}$	132 27
Tools, miscellaneous.....			53 27
Threshing.....	3,174 bushels	01 $\frac{13}{8}$	51 35
Ticking.....	398 yards	09 $\frac{3}{4}$	38 83
Tapistry.....	35 $\frac{3}{4}$ yards	34 $\frac{1}{4}$	12 25
Table legs.....	32	50	16 00
Table, extension.....	1		17 10
Table, side.....	1		7 13
Tin cans.....	2 dozen	2 14	4 28
Tinware, repairing.....			2 95
Tinware, miscellaneous.....			20 86
Thermometers.....	2 dozen	1 25	2 50
Thimbles.....	19 $\frac{1}{4}$ dozen	12 $\frac{1}{2}$	2 41
Traps, mouse.....	1 dozen		50
Towls.....	26 dozen	1 95 $\frac{1}{8}$	50 77
Toweling.....	1,494 yards	06 $\frac{1}{4}$	103 47
Twines.....	38 pounds	28 $\frac{1}{2}$	10 84
Toilet soap, barber's.....	20 pounds	28 $\frac{1}{2}$	5 70
Toilet soap, ivory.....	14 boxes	6 75	94 50
Toilet soap.....	4 $\frac{1}{3}$ dozen	1 16 $\frac{3}{4}$	5 06
Toilet soap.....	5 boxes	4 16	20 80
Table linen.....	84 $\frac{3}{8}$ yards	35 $\frac{2}{4}$	30 32
Table cloths.....	5	5 24 $\frac{1}{2}$	26 22
Table covers.....	1		2 00
Truck castors.....	4 set	1 00	4 00
Tallow.....	424 pounds	05	21 20
Tabacco, smoking.....	1,120 pounds	14 $\frac{5}{10}$	166 70
Tobacco, plug.....	604 pounds	21 $\frac{1}{2}$	129 52
Tollgate charges.....			80
Telegraphing.....			19 78
Telephone exchange.....			130 45
Traveling expenses.....			59 00
Transportation and freight.....			32 81
Thyme.....	12 bunches	01 $\frac{2}{3}$	20
Tea, Japan.....	1,706 pounds	19 $\frac{1}{20}$	335 22
Tea, Oolong.....	88 $\frac{1}{2}$ pounds	55 $\frac{3}{4}$	49 33
Tomatoes.....	3 baskets	32	96
Tomatoes.....	7 crates	1 24 $\frac{1}{4}$	8 70
Thread.....	138 dozen	43 $\frac{1}{2}$	60 03
Underclothing, miscellaneous.....			93 96
Ventilating, pipes, root cellar.....			48 00
Vials, jars and fixtures.....			10 93
Vehicles, painting and repairing.....			222 32
Veal.....	3,442 pounds	08 $\frac{1}{2}$	302 05
Veal, calves' livers.....	16	27 $\frac{1}{4}$	4 36
Veal, calves' livers.....	20 $\frac{3}{4}$ pounds	07 $\frac{1}{11}$	1 51
Veal, plucks.....	2	25	50
Vinegar.....	657 gallons		42 08
Vinegar, cider.....	171 gallons	20	34 20
Vinegar, C. & B.....	$\frac{1}{2}$ doz. bottles	2 30	1 15
Velveteen.....	4 $\frac{1}{2}$ yards	08	36

Itemized Statement of Cost, 1898.

Articles.	Quantity.	Average price.	Amount.
Window sill.....	1	.....	\$1 00
White lead.....	4,757 pounds	\$ 05 $\frac{1}{2}$	261 53
Wire screen.....	1,051 feet	01	10 51
Wire, galvanized netting.....	380 sq. feet	02	7 60
Window glass.....	5 boxes	2 87 $\frac{1}{2}$	14 36
Window lights.....	183 lights	10 $\frac{1}{3}$	18 90
Wall paper, borders.....	70 yards	11 $\frac{2}{3}$	7 90
Whitening.....	470 pounds	01 $\frac{1}{4}$	4 95
Wines.....	13 $\frac{3}{8}$ gallons	3 27	4 50
Whiskey.....	2 bottles	1 12 $\frac{1}{2}$	2 25
Wedges.....	14 pounds	04	56
White rock.....	50 pounds	09	4 50
Whips.....	3	33 $\frac{1}{3}$	1 00
Wheelbarrows.....	5	2 67	13 35
Watches and chains.....	3	2 65	7 29
Water cooler.....	1	.....	2 50
Wash cloths.....	1 dozen	.....	60
Wax, paraffine.....	158 pounds	09 $\frac{2}{7}$	15 51
Willows.....	414 pounds	07	28 98
Willows, green.....	3 bundles	50	1 50
Washing machines, repairing.....	.....	.....	2 00
Washboards.....	2 $\frac{1}{2}$ dozen	1 80	4 48
Yeast.....	421 $\frac{1}{2}$ pounds	15 $\frac{2}{9}$	65 55
Yarn.....	37 pounds	75 $\frac{1}{18}$	27 02
Total.....	.....	.....	\$75,583 11

Itemized Statement of Cost, 1897.

ITEMIZED STATEMENT OF COST

Of all articles purchased for Milwaukee Hospital for Insane during the fiscal year ending September 30, 1897.

Articles.	Quantity.	Average price.	Amount.
Amusements, miscellaneous			\$19 95
Adamant	7½ barrels	\$1 55	11 62
Alcohol	12 gallons	2 61	31 31
Axes	1 dozen		9 00
Axe handles	½ dozen	2 50	1 25
Axle grease	150 pounds	03½	5 00
Awning frames	8	1 27	10 16
Awning canvas	55¼ yards	12	6 63
Apple parer	1		7 50
Apples, green	14 barrels	1 74½	24 43
Apples, green	221½ bushels	29½	65 53
Apples, dried	5,973 pounds	04½	288 67
Asparagus	1 box		1 75
Allspice	22 pounds	10½	2 34
Almond paste	10 pounds	24½	2 45
Ammonia	9 pounds	11½	1 04
Bass string	1		1 25
Bass, repairing			1 00
Billiard cloth and covering			12 00
Billiard balls	1 set		10 00
Billiard cue tips	1 box		1 00
Bolts	5⅓ dozen	87½	4 65
Bake oven			523 00
Butts	2 dozen	2 57½	5 15
Blinds	3	2 50	7 50
Brushes, paint	40	80⅞	32 37
Blank books	46	1 12½	51 60
Books, memorandum	1 dozen		1 00
Book, reader	1		09
Brandy	1 gallon		4 00
Beer	4 cases	1 00	4 00
Boilers, insurance	4		53 33
Boilers, repairing			10 30
Belting	62 feet	12	7 41
Bees hives	15	50	7 50
Bees, comb foundation	30 pounds	41	12 30
Barn lumber	15,748 feet	16 49M	259 51
Barn shingles	9 M	2 25	20 21
Building paper	778 pounds	86	6 70
Barn door hangers	6 sets	2 00	12 00
Barn door rail	64 feet	20	12 80
Batts, O. G.	1,300 feet	60	7 80
Barn, mason work			112 75
Barn, repair			13 41
Barn, raising			43 00
Binding twine	85 pounds	09	7 65
Blankets	152	1 64⅞	250 60
Batts, cotton	1½ case	4 45	6 68
Brooms	12 dozen	1 73⅓	20 80

Itemized Statement of Cost, 1897.

Articles.	Quantity.	Average price.	Amount.
Brooms, whisk.....	2 dozen	\$ 87 $\frac{1}{2}$	\$1 75
Brushes, bath.....	$\frac{1}{6}$ dozen	12 00	2 00
Brushes, shaving.....	1 dozen	.....	3 00
Brushes, bakers.....	$\frac{1}{6}$ dozen	8 16	1 36
Brushes, tooth.....	1 dozen	.....	84
Brushes, scrub.....	5 dozen	1 05	5 25
Brushes, hair.....	2 dozen	2 75	5 50
Brushes, shoe.....	1 dozen	.....	1 75
Brushes, floor.....	2	3 40	6 80
Bagdad.....	5 $\frac{1}{2}$ yards	75	4 13
Beds, iron.....	2	11 75	23 50
Butcher steels.....	4	1 06 $\frac{1}{4}$	4 25
Bread cutter.....	1	.....	2 50
Bluing.....	3 pounds	83 $\frac{3}{4}$	2 51
Bleach, chlorine.....	411 pounds	06	24 64
Bananas.....	4 bunches	1 14 $\frac{1}{2}$	4 58
Berries.....	78 cases	1 18 $\frac{3}{8}$	92 41
Berries.....	32 baskets	78 $\frac{3}{4}$	25 20
Baking powder.....	127 $\frac{1}{4}$ pounds	38 $\frac{1}{2}$	48 51
Butter, creamery.....	12,600 pounds	18 $\frac{1}{2}$	2,364 02
Beef.....	109,617 pounds	06 $\frac{1}{8}$	6,855 30
Beef, tongues.....	105	30	31 50
Beef, bone marrow.....	6 pounds	1 00	6 00
Beans, navy.....	22 $\frac{1}{6}$ bushels	1 04 $\frac{1}{2}$	23 16
Beans, wax.....	1 box	.....	2 50
Beans, lima.....	78 pounds	03 $\frac{1}{2}$	2 73
Bacon.....	388 pounds	11 $\frac{3}{4}$	45 54
Bay leaves.....	1 pound	.....	08
Buttons.....	41 $\frac{1}{2}$ gross	28 $\frac{1}{2}$	11 74
Boots.....	38 pairs	1 97 $\frac{1}{2}$	75 10
Boots, rubber.....	6 pairs	2 20 $\frac{4}{6}$	13 25
Broom corn.....	885 pounds	04	35 40
Broom tacks.....	18 papers	05	90
Broom twine.....	21 pounds	25 $\frac{4}{7}$	5 37
Broom staples.....	6 pounds	10	60
Broom locks.....	3 gross	50	1 50
Checker boards.....	1 $\frac{1}{2}$ dozen	2 63	2 85
Checkers.....	6 set	20	1 20
Croquet.....	2 set	1 90	3 80
Christmas tree and trimmings.....	1	.....	12 96
Cement.....	20 $\frac{1}{2}$ barrels	1 38 $\frac{3}{4}$	28 43
Cement floors.....	.....	.....	39 50
Copying brush.....	1	.....	35
Corks.....	9 $\frac{3}{4}$ yards	40	3 90
Cylinder oil.....	260 $\frac{1}{2}$ gallons	37	96 28
Coal, soft.....	3,243 $\frac{1930}{2000}$ tons	2 15 $\frac{21}{25}$	7,001 33
Coal, hard.....	127 $\frac{1926}{2000}$ tons	6 00	767 78
Cows, new milched.....	6	41 84	251 00
Copper boiler.....	1	.....	1 75
Chamois skin.....	4	39 $\frac{1}{4}$	1 57
Catchbasin.....	1	.....	10 50
Carriage sponge.....	11 ounces	3 25lb	2 23
Corn cutting.....	8 $\frac{4}{5}$ acres	1 00	8 80
Carpet, dyeing.....	.....	.....	6 00

Itemized Statement of Cost, 1897.

Articles.	Quantity.	Average price.	Amount.
Crockery			\$392 32
Clocks.....	2	\$5 50	11 00
Clocks, repairing.....			7 85
Combs.....	25 $\frac{1}{3}$ dozen	97	24 54
Chambers.....	17 dozen	5 34 $\frac{3}{4}$	90 90
Curtain fixtures, miscellaneous.....			65 09
Curtains.....	6 pairs	2 82	16 90
Cretowne.....	20 yards	21 $\frac{1}{4}$	4 25
Curtain screen.....	478 yards	10 $\frac{1}{2}$	48 74
Canvas arm chair.....	2	75	1 50
Chairs, rockers.....	21 $\frac{1}{2}$ dozen	10 13	25 33
Chairs.....	7 $\frac{1}{2}$ dozen	10 19	77 26
Chintz.....	73 $\frac{1}{4}$ yards	55 $\frac{3}{4}$	4 32
Couch covers.....	3	1 95	5 85
Cockroach paste.....	1 box		50
Cockroach paste.....	20 pounds	75	15 00
Caustic soda.....	2,033 pounds	02 $\frac{4}{5}$	52 32
Clothes pins.....	2 boxes	42 $\frac{1}{2}$	85
Candles.....	112 pounds	07 $\frac{2}{3}$	8 80
Car fares.....			21 08
Cigars.....	2 boxes	3 25	6 50
Cranberries.....	10 quarts	10	1 00
Cranberries.....	1 barrel		5 75
Cranberries.....	1 box		1 75
Cheese.....	236 pounds	10 $\frac{3}{4}$	25 29
Crackers.....	301 pounds	07 $\frac{3}{8}$	23 00
Coffee, Mocha and Java.....	704 pounds	34 $\frac{3}{8}$	245 64
Coffee, Rio.....	4,179 pounds	14 $\frac{3}{8}$	621 16
Corn meal.....	22 $\frac{3}{10}$ barrels	2 59	57 70
Cider.....	149 gallons	10 $\frac{1}{11}$	16 25
Currants.....	235 pounds	06 $\frac{3}{8}$	15 58
Cabbage.....	4 crates	2 62 $\frac{1}{2}$	10 50
Cucumbers.....	7 dozen	40	2 80
Cucumbers.....	1 crate		1 75
Cherries.....	1 case		1 25
Cherries.....	2 bushels	1 87 $\frac{1}{2}$	3 75
Celery.....	2 boxes	1 37 $\frac{1}{2}$	2 75
Chocolate.....	96 pounds	29 $\frac{1}{6}$	28 50
Corn, canned.....	15 $\frac{1}{4}$ dozen	1 05 $\frac{1}{2}$	16 04
Corn.....	650 ears	00 $\frac{1}{2}$	3 25
Corn, pop.....	116 pounds	02 $\frac{2}{5}$	2 78
Corn starch.....	202 pounds	05 $\frac{3}{5}$	11 78
Candy.....	185 pounds	06	11 10
Clams.....	300	01	3 00
Cocoanut.....	9 pounds	11 $\frac{1}{2}$	1 00
Chickens.....	103 pounds	29 $\frac{1}{4}$	29 94
Cinnamon.....	32 pounds	16 $\frac{1}{6}$	5 26
Citron.....	10 pounds	13	1 30
Cloves.....	13 pounds	15 $\frac{3}{3}$	2 03
Catsup.....	$\frac{1}{3}$ dozen	3 30	1 10
Cambric.....	393 $\frac{3}{4}$ yards	05 $\frac{3}{4}$	22 66
Cheese cloth.....	186 $\frac{3}{4}$ yards	03 $\frac{1}{2}$	6 48
Clothing, miscellaneous.....			55 28
Collars.....	4	12 $\frac{1}{2}$	50

Itemized Statement of Cost, 1897.

Articles.	Quantity.	Average price.	Amount.
Caps	6 dozen	\$4 50	\$27 00
Coats	2	2 75	5 50
Coat, rubber	1	8 00	8 00
Coats and vests	8	4 37 $\frac{1}{2}$	35 00
Carpet scraps	1,242 pounds	07	86 94
Carpet wrap	28 pounds	20	5 60
Drain tile	30 pieces	03 $\frac{1}{2}$	1 14
Doors	4	5 56	22 25
Document files	4	87 $\frac{1}{2}$	3 50
Drugs and medicines			792 45
Drain tile	1,200 feet	01 $\frac{1}{2}$	18 00
Drain pipe	250 feet	54 $\frac{1}{2}$	136 25
Drain pipe	17 pieces	24 $\frac{1}{2}$	4 15
Duck, waterproof	50 yards	50	25 00
Dusters	11 $\frac{1}{2}$ dozen	4 19	3 84
Dish cloths	2 $\frac{1}{2}$ dozen	81 $\frac{1}{2}$	1 70
Dynamo oil	150 gallons	35	52 50
Dress goods	102 yards	15 $\frac{1}{2}$	16 07
Duck	48 yards	14 $\frac{1}{2}$	6 80
Denim	72 yards	13 $\frac{1}{8}$	9 99
Electric bells and repairing			33 30
Elevators, repairing			44 65
Envelopes	4M	1 56	6 23
Erasers	1 $\frac{1}{2}$ dozen	1 02	1 10
Engine, packing	11 $\frac{3}{8}$ pounds	72	7 97
Egg beaters	$\frac{1}{3}$ dozen	30	10
Eyelet raisers	1		25
Electric light supplies and labor			695 37
Express charges			59 83
Extracts	16 pounds	81 $\frac{1}{4}$	13 00
Eggs	3,146 dozen	15 $\frac{5}{8}$	491 40
Fire brick	35	03 $\frac{1}{2}$	1 23
Fire clay	1 bag		85
Fly net, repairing	1		1 30
Fertilizer	$\frac{1}{4}$ ton	14 00	7 00
Feed cutter	1		124 00
Farm machinery and tool repair'g			32 04
Feed cutting	7 days	5 00	35 00
Flower pots	1,500	98 $\frac{1}{3}$	14 75
Furniture, repairing			21 97
Furniture tips	3 $\frac{5}{8}$ gross	5 18	19 84
Forks, table	6 dozen	3 25	19 50
Faucets	5	38	1 90
Flesh fork	1		05
Felt	1 $\frac{1}{2}$ yards	80	1 20
Fish, fresh	3,716 pounds	07 $\frac{3}{8}$	282 00
Fish, salt	48 half barrels	5 44	261 00
Fish, cod	160 pounds	06 $\frac{1}{4}$	10 00
Flour	525 barrels	4 29 $\frac{3}{4}$	2,256 10
Figs	26 $\frac{1}{2}$ pounds	14 $\frac{3}{4}$	3 92
Flannel	392 yards	08 $\frac{1}{30}$	31 49
Glue	65 pounds	16 $\frac{1}{2}$	10 76

Itemized Statement of Cost, 1897.

Articles.	Quantity.	Average price.	Amount.
Glue.....	3 bottles	\$ 23 $\frac{1}{3}$	\$ 70
Green house, repairing.....			6 08
Ground feed.....	98 $\frac{105}{2000}$ tons	9 06	888 39
Glassware.....			34 87
Grapes.....	6 baskets	22 $\frac{1}{2}$	1 35
Gelatin.....	3 dozen	1 43 $\frac{1}{3}$	4 30
Ginger.....	38 pounds	17 $\frac{1}{2}$	6 61
Gingham.....	715 yards	08 $\frac{3}{4}$	61 08
Gloves.....	5 pairs	1 25	6 25
Hinges.....	4 $\frac{3}{4}$ dozen	55	2 57
Hose pipe.....	210 feet	21 $\frac{3}{4}$	45 00
Horse blanket.....	2	2 83 $\frac{1}{3}$	8 50
Horse brushes.....	4	1 20	4 80
Horse clippers.....	1		3 00
Horse clippers, grinding.....	3	75	2 25
Horse comb.....	1		15
Harness, breeching and reins.....	1		14 00
Harness, bridle and saddle.....	1		13 00
Harness, repairing.....			139 13
Horse boots.....	2	75	1 50
Harness oil.....	1 gallons	1 00	2 00
Hog markers.....	100	03 $\frac{1}{2}$	3 50
Hog punch.....	1		1 00
Hay forks.....	1 dozen		4 50
Horses.....	3	135 00	405 00
Horses, medical services.....			27 00
Horse medicines.....			6 05
Hay.....	24 tons	8 36	200 54
Hay, standing grass.....	1 lot		75 00
Horse shoeing.....			201 00
Hardware.....			23 04
Hair clippers.....	2	1 75	3 50
Hair clippers, grinding.....	10	55	5 50
Hair clippers, springs.....	1 dozen		70
Hamper.....	1		2 60
Ham.....	1,018 pounds	11	111 93
Ham, smoking.....	90 pieces	10	9 00
Ham, potted.....	1 can		20
Hoods, ladies.....	37	37 $\frac{1}{3}$	13 80
Hats, men's felt.....	6 dozen	6 00	36 00
Hats, men's straw.....	8 dozen	1 75	14 00
Hats, ladies.....	75	35 $\frac{1}{2}$	26 60
Handkerchief's.....	6 $\frac{1}{3}$ dozen	74 $\frac{1}{4}$	4 70
Hose, ladies.....	1 $\frac{1}{8}$ dozen	2 65	4 88
Iron.....	64 pounds	02 $\frac{3}{8}$	1 79
Iron brackets.....	5 $\frac{2}{3}$ dozen	4 86 $\frac{1}{2}$	27 57
Iron registers.....	1		3 42
Iron hooks.....	1 gross		35
Ink.....	10 quarts	58	5 80
Ink stands.....	4	41 $\frac{1}{3}$	1 65
Ice hooks.....	1 dozen		12 84
Ice picks.....	5	38	1 90
Ice cream freezer.....	1		3 25
Ironing boards.....	4	1 75	7 00

Itemized Statement of Cost, 1897.

Articles.	Quantity.	Average price.	Amount.
Ice cream.....	20 gallons	\$1 00	\$20 00
Ice.....	34 $\frac{730}{2000}$ tons	1 97	67 59
Jumpers.....	3 dozen	5 50	16 50
Jacket.....	1		2 69
Keys.....	25	25 $\frac{1}{2}$	6 30
Kettles.....	13	83	10 78
Kettle, retinning.....	1		19 75
Knives and forks.....	$\frac{1}{2}$ gross	3 75	63
Knives, table.....	12 dozen	3 25	39 00
Knives, butcher.....	4	40	1 60
Knives, kitchen.....	5 dozen	84	4 20
Knives and forks, carving.....	3 sets	1 92	5 75
Knitting machines, repairing.....			1 02
Kegs.....	4	82 $\frac{1}{2}$	3 30
Kannikens.....	$\frac{1}{2}$ dozen	3 25	1 63
Kerosene.....	90 gallons	08 $\frac{1}{3}$	7 50
Knitting cotton.....	8 $\frac{1}{3}$ pounds	40 $\frac{2}{3}$	3 38
Lime.....	60 barrels	56	33 55
Linseed oil.....	66 $\frac{1}{2}$ gallons	35 $\frac{1}{2}$	23 77
Locks.....	7 dozen	6 66	46 60
Locks, repairing.....			18 60
Locks, sash.....	$\frac{1}{2}$ gross	1 40	23
Lumber.....	19, 136 feet	28 28M	541 20
Lath.....	1, 800	3 50M	6 30
Lead pencils.....	1 $\frac{1}{4}$ gross	4 32 gross	5 40
Library books.....	1 volume		6 00
Labels.....	4 cartoons	75	3 00
Laundry machinery, shafts, pulleys, belting, etc.....			134 26
Lawn mower.....	1		10 20
Lawn swings.....	2	6 00	12 00
Linseed meal.....	30 pounds	03 $\frac{5}{16}$	1 06
Linolium.....	73 $\frac{1}{2}$ yards	1 01 $\frac{7}{8}$	74 88
Laundry tub, truck.....	1		14 00
Laundry tubs.....	$\frac{1}{2}$ dozen	6 00	3 00
Laundry baskets.....	1 $\frac{1}{2}$ dozen	10 49	15 74
Laundry stoves, repairing.....			10 00
Lantern globes.....	1 dozen		60
Lantern burners.....	$\frac{1}{4}$ dozen	1 75	44
Lamps, electric.....	500	22 $\frac{1}{10}$	110 50
Lamp shade holder.....	1		1 25
Lanterns.....	1 $\frac{1}{2}$ dozen	6 25	9 38
Lobsters.....	7 $\frac{1}{2}$ pounds	18	1 35
Lemons.....	12 boxes	3 79 $\frac{1}{8}$	45 50
Lemons.....	5 $\frac{1}{2}$ dozen	21	1 15
Lettuce.....	17 dozen	41 $\frac{1}{6}$	7 05
Lard.....	4, 136 pounds	05 $\frac{1}{2}$	227 49
Lamb.....	4, 237 pounds	09 $\frac{3}{4}$	414 53
Lemon peel.....	2 pounds	20	40
Music and entertainment.....			112 29
Mouth organs.....	4	32 $\frac{1}{2}$	1 30
Magneto telephones, repairing.....			25 55

Itemized Statement of Cost, 1897.

Articles.	Quantity.	Average price.	Amount.
Mouldings	2,300 feet	\$12 40	\$28 50
Magazines and periodicals	20	2 72½	54 50
Mucilage.....	1 quart	.....	80
Medicine cups.....	1 gross	.....	7 25
Mattocks	½ dozen	4 55	2 28
Mosquito netting.....	8 pieces	32¾	2 62
Moth balls.....	12 pounds	05½	70
Meat chopper and stuffer.....	1	.....	75 00
Matting	169½ yards	39½	66 84
Matting.....	1 roll	.....	12 00
Mops	7 dozen	81¼	5 65
Marking ink	2 pounds	10 50	21 00
Marking pens.....	3 dozen	15	45
Mirrors	1½ dozen	4 13	4 47
Mangle, canvas sheets.....	13½ yards	35	4 67
Mangle, blanket.....	1	.....	11 37
Mangle, repairing.....	.....	.....	8 80
Matches.....	14 gross	60½	8 45
Medical services.....	.....	.....	455 00
Macaroni.....	66 pounds	07¼	4 68
Melons.....	18	23½	4 24
Melons.....	13 baskets	56½	7 35
Melons.....	3 crates	88½	2 66
Mutton.....	21,445 pounds	05	1,072 25
Milk.....	101 cans	25	25 25
Mustard seed.....	18¾ pounds	07½	1 42
Mustard.....	85 pounds	22¼	19 00
Mint.....	6 bunches	05	30
Muslin, brown.....	1,955 yards	04¾	92 83
Muslin, bleached.....	50 yards	10	5 00
Maximum stripe.....	415 yards	09½	39 92
Mittens, men's.....	12 dozen	4 50	54 00
Mattress hair.....	251 pounds	34½	86 00
Mattress twine.....	6 pounds	37	2 22
Mattress needles.....	1½ dozen	86½	1 30
Mat and basket shop, miscellaneous.....	.....	.....	27 58
Nails	19 kegs	2 14½	40 70
Nails	16 pounds	067½	1 10
Needles, sewing	4½ M.	1 24	5 94
Needles, knitting	¼ M.	12 84	3 21
Needles, darning.....	1 box	.....	32
Napkins	12½ dozen	1 14	13 74
Nuts, mixed	52 pounds	12½	6 55
Nuts, cocoa.....	6	05½	35
Nutmeg.....	3 pounds	45	1 35
Oats.....	339½ bushels	24¼	81 58
Opague.....	175½ yards	13½	23 70
Office stool.....	1	.....	3 75
Oil cloth.....	5 pieces	22½	11 08
Onions	½ peck	1 00	50
Oat meal.....	27 barrels	3 56¼	96 15
Oranges	8 boxes	3 35½	26 85

Itemized Statement of Cost, 1897.

Articles.	Quantity.	Average price.	Amount.
Oranges	1½ dozen	\$ 48	\$ 60
Oysters	41 cans	33	13 50
Oysters	118 gallons	1 10	129 84
Olives	1½ dozen	7 80	10 40
Olive oil	8 gallons	2 90 ⁵ / ₈	23 25
Overalls	14 ¹ / ₂ dozen	6 03 ⁵ / ₈	85 00
Overcoats	38	6 55 ¹ / ₄	249 00
Piano, tuning			2 50
Playing cards	13 ¹ / ₃ dozen	71 ¹ / ₄	9 50
Plaster	3 ³ / ₅ tons	7 03	25 30
Plastering hair	5 bushels	30	1 50
Pipe and fittings			570 52
Putty	259 pounds	02 ⁶ / ₁₃	6 38
Paints			150 89
Paper fasteners	2 boxes	11 ¹ / ₂	23
Pens	4 gross	88 ³ / ₄	3 55
Pen holders	2 dozen	80	1 60
Printing			98 05
Paper, carbon	2 dozen	40	80
Paper, pads	26 dozen	25	6 51
Paper, note	3 reams	95	2 85
Paper, blotters	12 ³ / ₄ dozen	05 ¹ / ₈	66
Paper, card board	6 sheets	05	30
Paper, record	4 quires	50	2 00
Powder paper	8 packages	30 ¹ / ₃	2 43
Putz pomade	2 pounds	50	1 00
Pumps, repairing			75
Paris green	13 pounds	20	2 60
Pigs	2	18 00	36 00
Pigs' pen, repairing			119 64
Plants, trees	156	28 ¹ / ₂	44 00
Plants, flowers	337	04 ¹ / ₄	15 35
Plants, celery	1,200	01	12 00
Picks	½ dozen	3 58	1 79
Pick handles	2 dozen	1 35	2 70
Pruning shear	1		30
Pillows, feather	2	62 ¹ / ₂	1 25
Pictures	6	1 05	6 29
Powder guns	3	08 ¹ / ₃	25
Potato mashers	2	07	14
Pins	17 packages	233 ¹ / ₄	4 03
Polishing powder	2 dozen	82 ¹ / ₂	1 65
Paper, toilet	6 cases	3 20	19 20
Paper, fly	2 cases	2 55	5 10
Paper, fly	21 sheets	02 ¹ / ₁	43
Paper, tissue	15 sheets	04 ² / ₃	70
Pails	18 ¹ / ₂ dozen	1 63 ¹ / ₄	30 20
Plait-raiser	1		15
Postage			84 73
Patients, expenses			65 97
Pipes	8 boxes	1 21	9 75
Pipes	1 dozen		2 50
Pine apples	1 crate		3 50
Pine apples	6 dozen	1 50	9 00

Itemized Statement of Cost, 1897.

Articles.	Quantity.	Average price.	Amount.
Poultry	3,907 pounds	\$ 12 $\frac{1}{4}$	\$478 53
Pork, fresh	5,002 pounds	05 $\frac{1}{8}$	293 34
Pork, mess	2 barrels	9 12 $\frac{1}{2}$	18 25
Potatoes	1966 $\frac{1}{2}$ bushels	26	511 25
Potatoes, sweet	6 barrels	2 32 $\frac{1}{3}$	13 94
Peaches	16 baskets	59 $\frac{1}{16}$	9 45
Peaches	2 boxes	1 05	2 10
Peaches	13 crates	1 12	14 55
Peaches	4 bushels	1 59	6 75
Pears	63 $\frac{3}{4}$ bushels	1 00	6 75
Prunes	8,231 pounds	05 $\frac{7}{8}$	483 66
Plums	4 crates	1 01 $\frac{1}{2}$	4 06
Plums	$\frac{1}{2}$ bushel	1 50	75
Peas, canned	15 $\frac{3}{4}$ dozen	1 32 $\frac{1}{2}$	23 96
Peas, green	1 box	.....	2 25
Pepper	81 pounds	14 $\frac{1}{3}$	11 60
Prints	1,837 $\frac{3}{4}$ yards	08 $\frac{1}{4}$	150 73
Pants	60 pairs	2 32 $\frac{1}{2}$	139 50
Quilts	27	82 $\frac{1}{3}$	22 22
Resin	2 boxes	10	90
Ranges, repairing .....	.....	.....	47 15
Repairs, miscellaneous .....	.....	.....	485 62
Rubber stamps	4	31 $\frac{1}{4}$	1 25
Rubber bands	3 gross	43 $\frac{1}{3}$	1 30
Root beer	2 dozen	1 75	3 50
Rum	2 gallons	5 09	10 18
Rakes	2 dozen	1 87 $\frac{1}{2}$	3 75
Rope	194 pounds	.....	16 13
Rugs	25	3 44	86 00
Refrigerator	1	.....	12 50
Razors	$\frac{1}{3}$ dozen	11 00	3 67
Razer strops	$\frac{1}{4}$ dozen	4 00	67
Rice	1,656 pounds	05 $\frac{9}{10}$	90 24
Raisins, cooking	558 pounds	06 $\frac{9}{10}$	35 17
Raisins, layers	5 boxes	1 83	9 15
Radish	12 dozen	50	6 00
Radish, horse	2 bunches	37 $\frac{1}{2}$	75
Rhubarb	2 boxes	1 90	2 00
Stucco	9 barrels	1 72 $\frac{2}{3}$	15 50
Sewer pipe	1,248 $\frac{1}{2}$ feet	06 $\frac{3}{4}$	84 31
Sewer pipe, T's	52 pieces	26	13 44
Sand paper	36 $\frac{2}{3}$ dozen	11 $\frac{1}{3}$	4 15
Screws	47 $\frac{5}{8}$ gross	19 $\frac{1}{15}$	9 13
Sash door mouldings	4 pieces	50	2 00
Sash	32 pieces	1 58	50 50
Shipping tags	2 c	12 $\frac{1}{2}$	25
Sponges	11 $\frac{1}{8}$ pounds	2 92	4 92
Surgical instruments .....	.....	.....	72 89
Stabling horses .....	.....	.....	18 00
Shovels	2 dozen	7 00	14 00
Scoops	1 dozen	.....	8 00
Spades	$\frac{1}{2}$ dozen	7 50	3 75

Itemized Statement of Cost, 1897.

Articles.	Quantity.	Average price.	Amount.
Spading forks.....	½ dozen	\$5 60	\$2 80
Stove.....	1	.....	8 00
Straw.....	7 $\frac{324}{2000}$ tons	5 50	39 33
Seeds.....	.....	.....	93 38
Sheeting, rubber.....	11 $\frac{1}{3}$ yards	75	1 00
Sheeting, bleached.....	486 $\frac{3}{4}$ yards	09 $\frac{3}{8}$	48 45
Sheeting, brown.....	578 $\frac{1}{4}$ yards	10 $\frac{2}{5}$	60 07
Stage drapery.....	.....	.....	25 88
Shading.....	115 yards	13 $\frac{1}{2}$	15 53
Sulphur.....	1,651 pounds	01 $\frac{1}{5}$	26 08
Sanitas.....	11 gallons	1 70	18 70
Spoons, tinned table.....	½ gross	1 60	80
Spoons, table.....	2 dozen	4 35	8 70
Spoons, tea.....	12 dozen	2 14 $\frac{1}{2}$	25 70
Spoons, dessert.....	2 dozen	3 80	7 60
Spoons, wooden.....	6 $\frac{1}{3}$ dozen	22 $\frac{1}{5}$	1 38
Sewing machine table with electric driving attachment.....	1	.....	50 00
Sewing machine, repairing.....	.....	.....	1 15
Sand soap.....	18 boxes	2 34 $\frac{1}{3}$	42 13
Shears.....	7 pairs	43 $\frac{2}{7}$	3 03
Shoe polish.....	1 bottle	.....	50
Shoe blacking.....	3 dozen	45	1 35
Shoe buckles, patent.....	½ dozen	9 00	4 50
Starch.....	1,656 pounds	04 $\frac{1}{17}$	72 99
Soap.....	7,366 pounds	03	220 98
Soap.....	7 boxes	4 09 $\frac{2}{7}$	28 65
Sad irons and stands, electric.....	9	6 19	55 67
Sal soda.....	7,666 pounds	85	65 18
Sole leather.....	6 pieces	98	5 87
Steam damper.....	1	.....	75
Signal oil.....	5 gallons	65	3 25
Spectacles.....	2 pairs	50	1 00
Spectacle cases.....	1 $\frac{1}{3}$ dozen	32 $\frac{1}{4}$	35
Sardines.....	1 dozen	.....	2 94
Sausages.....	320 pounds	09 $\frac{3}{4}$	31 15
Sausages, wieners.....	745 pounds	08	59 60
Syrup.....	930 gallons	16 $\frac{2}{13}$	150 20
Syrup, maple.....	21 gallons	1 08	22 65
Sugar, granulated.....	15,539 pounds	04 $\frac{1}{17}$ $\frac{3}{4}$	747 60
Sugar, C.....	5,301 pounds	03 $\frac{1}{17}$ $\frac{0}{7}$	204 23
Sugar, cut loaf.....	262 pounds	05 $\frac{2}{3}$	14 64
Sugar, powdered.....	430 pounds	05 $\frac{2}{3}$	22 45
Sage.....	2 pounds	10	20
Salt.....	3 sacks	2 50	7 50
Salt.....	39 barrels	81 $\frac{1}{2}$	31 80
Salt peter.....	85 pounds	08	6 80
Saleratus.....	60 pounds	05	3 00
Swiss.....	10 yards	25	2 50
Shawls.....	34	2 22 $\frac{3}{4}$	75 74
Socks, Alaska.....	4 dozen	1 78 $\frac{1}{4}$	7 13
Socks, men's.....	1 $\frac{1}{3}$ dozen	2 05	3 25
Suspenders.....	6 $\frac{1}{2}$ dozen	2 19	13 33
Shirts.....	17 $\frac{1}{8}$ dozen	5 08 $\frac{1}{4}$	87 25
Suits, men's.....	77	5 98 $\frac{1}{9}$	460 50

Itemized Statement of Cost, 1897.

Articles.	Quantity.	Average price.	Amount.
Shoes, ladies'	95 pairs	\$1 16 $\frac{1}{4}$	\$110 38
Shoes, ladies' over	62 pairs	34 $\frac{3}{4}$	21 54
Shoes, men's	80 pairs	1 42 $\frac{1}{2}$	114 00
Shoes, men's over	36 pairs	1 41 $\frac{1}{8}$	50 82
Shoes, repairing			23 85
Slippers, men's	61 pairs	95	57 95
Slippers, ladies'	4 pairs	1 21	4 84
Salaries and wages			24,297 06
Turpentine	127 gallons	33 $\frac{1}{20}$	42 59
Typewriter	1		67 50
Tools, miscellaneous			83 39
Threshing, oats	1,422 bushels	02	28 44
Threshing, rye	28 bushels	03	84
Ticking	48 $\frac{1}{4}$ yards	09 $\frac{7}{8}$	4 53
Table legs	18 set	1 66 $\frac{1}{3}$	30 00
Table tops, lumber			36 90
Tinware, miscellaneous			184 61
Thermometers	1 dozen		1 75
Thimbles	1 $\frac{1}{2}$ gross	78 $\frac{2}{3}$	1 18
Traps, rat	3	55 $\frac{2}{3}$	1 67
Traps, mouse	1 $\frac{1}{2}$ dozen	83 $\frac{1}{3}$	1 25
Towels	22 dozen	1 15 $\frac{1}{11}$	25 32
Toweling	1,294 yards	07 $\frac{1}{8}$	91 59
Twines	23 pounds	16 $\frac{1}{4}$	3 72
Toilet soap	44 pounds	12 $\frac{7}{8}$	5 66
Toilet soap	4 dozen	97	3 88
Toilet soap	15 boxes	5 93	88 93
Toilet soap	2 lots	3 17	6 34
Table linens	293 $\frac{1}{2}$ yards	44 $\frac{1}{2}$	130 80
Table linens, floss	6 $\frac{1}{2}$ dozen	47	3 05
Table linens, stamped	$\frac{1}{2}$ dozen	4 62	2 31
Table cloths	6	2 56 $\frac{2}{3}$	15 40
Table covers	9	83	7 46
Tape measures	1		05
Tallow	1,837 pounds	04 $\frac{8}{9}$	89 75
Tobacco, smoking	1,120 pounds	12 $\frac{3}{6}$	138 45
Tobacco, plug	677 pounds	18	121 86
Telegraphing			21 14
Telephone exchange			153 40
Traveling expenses			96 00
Transportation and freight			74 67
Tea	2,029 pounds	19 $\frac{1}{10}$	387 52
Tripe	3 pounds	08	24
Tomatoes, canned	1 can		10
Tomatoes	12 crates	1 10	13 20
Twill bleached	50 $\frac{1}{4}$ yards	10 $\frac{1}{6}$	5 10
Thread	101 $\frac{1}{4}$ dozen	41 $\frac{1}{8}$	42 14
Underclothing, ladies' vests and pants	13 $\frac{1}{4}$ dozen	2 80 $\frac{1}{4}$	37 13
Underclothing, men's shirts and drawers	170 pieces	26 $\frac{2}{11}$	44 50
Underclothing, men's drawers	16 dozen	5 50	88 00

Itemized Statement of Cost, 1897.

Articles.	Quantity.	Average price.	Amount.
Violin strings	20	\$ 19	\$3 80
Violin bows, repairing			1 20
Vials, jars and fixtures			11 21
Vehicles, repairing and painting			171 94
Veal	5,448 pounds	07 $\frac{9}{11}$	414 89
Veal, calves' livers	57	19 $\frac{1}{2}$	11 10
Vinegar	621 gallons	07 $\frac{6}{17}$	45 63
White lead	1,836 pounds	05 $\frac{1}{8}$	98 77
Wire cloth	1,349 $\frac{2}{3}$ feet	01 $\frac{2}{3}$	22 50
Wire guards	78	71	55 32
Wire cloth, covering pipe and labor			26 40
Wall paper and labor			51 41
Whitening	470 pounds	01	4 70
Window lights	366	10 $\frac{1}{2}$	39 43
Water brush	1		60
Writing book	1		1)
Wines	19 gallons	2 29 $\frac{3}{4}$	43 64
Whiskey	40 $\frac{4}{10}$ gallons	2 47 $\frac{1}{8}$	100 03
Wedges	30 pounds	03 $\frac{1}{2}$	1 05
Wagon sun shade	1		3 75
Wheelbarrows	5	1 52	7 53
Webbing	1 roll		95
Wadding	12 sheets	02 $\frac{1}{4}$	27
Watch	1		4 50
Wax, paraffine	391 pounds	07 $\frac{11}{16}$	29 03
Wax, bees'	33 $\frac{7}{8}$ pounds	27 $\frac{1}{2}$	9 33
Wash machine	1		175 00
Wash machine, cylinder	1		35 00
Wash machine, repairing			69
Wringers, repairing			2 40
Wash boards	1 $\frac{1}{2}$ dozen	1 92	2 88
Wicks, lamp	1 $\frac{1}{8}$ gross	35	41
Wicks, candle	5 pounds	25	1 25
Yeast	395 pounds	24 $\frac{3}{8}$	96 25
Yarn, worsted	26 $\frac{1}{2}$ pounds	65 $\frac{1}{2}$	17 30
Total			\$71,447 91

Statistical Tables.

STATEMENT

Showing receipts and disbursements and current cost of maintenance during the fiscal year ending September 30, 1897.

CURRENT EXPENSES.		
To balance in treasury September 30, 1896.....	\$1,497 71	.....
To appropriation of county board	70,000 00	.....
To interest received on bank account.....	469 07	.....
To board of private patients	7,541 81	.....
To sales from farm	275 43	.....
To sales of waste material.....	66 98	.....
Total		\$79,851 00
<i>Cr.</i>		
By amusements	\$196 80	.....
By alteration and repairs	3,382 79	.....
By books, stationery and printing	325 57	.....
By drugs and medical supplies.....	1,094 71	.....
By engines, boilers, machinery and tools	439 69	.....
By fuel and heating	7,769 11	.....
By farm, barn and garden	3,960 81	.....
By household supplies	2,970 55	.....
By laundry expenses.....	913 71	.....
By lights, including fixtures.....	899 70	.....
By miscellaneous items	1,312 23	.....
By provisions.....	21,033 80	.....
By patients' clothing	2,597 97	.....
By salaries and wages	24,297 06	.....
By mat and basket shop	253 41	.....
Total		\$71,447 91
Balance		\$8,403 09
Less receipts from private patients, sales, etc.		7,884 22
Balance in treasury September 30, 1897....		\$518 87

Statistical Tables.

STATEMENT OF MONTHLY EXPENDITURES

*At Milwaukee Hospital for the Insane for the fiscal year ending
September 30, 1897.*

Months.	Current expenses.	Improvements.	Total.
October, 1896	\$6,551 57	\$14,195 00	\$20,746 57
November, 1896	7,919 76	4,415 00	12,334 76
December, 1896	6,467 12	3,625 00	10,093 12
January, 1897	6,356 79	3,400 00	9,756 79
February, 1897	5,086 94	56 01	5,142 95
March, 1897	6,383 91	5,765 00	12,148 91
April, 1897	5,744 51	.....	5,744 51
May, 1897	6,313 45	3,000 00	9,313 45
June, 1897	6,268 52	3,705 00	9,973 52
July, 1897	5,676 87	.....	5,676 87
August, 1897	4,757 43	690 00	5,447 43
September, 1897	3,920 97	669 31	4,590 28
Totals	\$71,447 91	\$39,520 32	\$110,968 23

Statistical Tables.

IMPROVEMENTS.

General improvement account.

1896.	DR.		
October 1.	To balance in treasury		\$2,279 20
	CR.		
	By bills paid on account:		
	Brick cistern	\$225 00	.....
	Hen house	125 32	.....
	Power house, heating, ventilating, power plant, extra	1,200 00	.....
			1,550 32
	Balance in treasury Sep- tember 30, 1897		\$728 88

Special improvement account.

1896.	DR.		
October 1.	To balance in treasury	\$31,720 00	.....
	Appropriation by county board	6,500 09	.....
			\$38,220 00
	CR.		
	By bills paid on account:		
	Power house, heating, ventilating, power plant, etc		37,970 00
	Balance in treasury Sep- tember 30, 1897		\$250 00

Statistical Tables.

CURRENT COST OF MAINTENANCE.

Supplies on hand Oct. 1, 1896	\$1,712 25
Current expenses as per invoices	71,447 91
Total	\$73,160 16
Less supplies on hand October 1, 1897.....	1,393 21
Actual consumption or current expenses.....	\$71,766 95
Less receipts from private patients, sales, etc.....	7,884 22
Cost of maintenance to Milwaukee county.....	\$63,882 73
Total number of days' board furnished, 132,944 days.	
Weekly, per capita cost on actual consumption.....	3 78
Weekly, per capita cost to Milwaukee county	3 36

Statistical Tables.

PRODUCTS OF FARM AND GARDEN

*Of Milwaukee Hospital for Insane for the fiscal year ending
Sept. 30, 1897.*

Asparagus	61 dozen bunches @ 50 cents.....	\$30 50
Beets.....	221 bushels @ 30 cents.....	66 30
Beet tops.....	371 dozen @ 15 cents.....	55 65
Beans, green.....	187 bushels @ 45 cents.....	84 15
Beef.....	1,100 pounds @ 6 cents.....	66 00
Carrots.....	532 bushels @ 35 cents.....	186 20
Currants.....	28 bushels @ \$2.50.....	70 00
Cucumbers.....	221 dozen @ 20 cents.....	24 20
Cucumbers.....	275 bushels @ 50 cents.....	137 50
Cabbage.....	13,858 heads @ 2½ cents.....	346 45
Cauliflower.....	191 heads @ 5 cents.....	9 55
Corn.....	12,310 ears @ ½ cent.....	61 55
Celery.....	636 dozen @ 15 cents.....	95 40
Celery, root.....	103 dozen @ 25 cents.....	25 75
Ensilage.....	15½ tons @ \$2 50.....	375 00
Hay.....	35 tons @ \$9.00.....	315 00
Kohlrabi.....	344 dozen @ 20 cents.....	68 80
Kale.....	50 heads @ 5 cents.....	2 50
Lettuce.....	704 dozen @ 20 cents.....	140 80
Millions.....	217 dozen @ 50 cents.....	108 50
Milk.....	15,864 gallons @ 12½ cents.....	1,983 00
Oats.....	1,348 bushels @ 25 cents.....	337 00
Onions.....	367 bushels @ 50 cents.....	183 50
Onions, green.....	562 dozen @ 10 cents.....	56 20
Pork.....	15,415 pounds @ 4½ cents.....	693 68
Potatoes.....	600 bushels @ 40 cents.....	240 00
Parsley.....	156 bushels @ 5 cents.....	7 80
Pickle onions.....	1½ bushels @ \$2 00.....	3 00
Peas.....	150 bushels @ 20 cents.....	90 00
Peppers.....	53 dozen @ 20 cents.....	10 60
Rhubarb.....	192 dozen @ 20 cents.....	38 40
Radish.....	855 dozen @ 15 cents.....	128 25
Rutabagas.....	170 bushels @ 30 cents.....	51 00
Strawberries.....	11 bushels @ \$2.00.....	22 00
Spinach.....	102 bushels @ 35 cents.....	35 70
Straw.....	30 tons @ \$5.00.....	150 00
Tomatoes.....	916 bushels @ 35 cents.....	320 60
Turnips.....	20 bushels @ 30 cents.....	6 00
Total .....	.....	\$6,626 53

Statistical Tables.

STATEMENT

Showing receipts and disbursements and current cost of maintenance, during the fiscal year ending September 30, 1898.

CURRENT EXPENSES.		
To balance in treasury September 30, 1897.....	\$518 87	.....
To appropriation by county board.....	87,500 00	.....
To interest received on bank account.....	269 58	.....
To board of private patients.....	7,618 83	.....
To sales from farm.....	356 02	.....
To sales of waste material, etc.....	110 93	.....
Total.....		\$96,374 23
<i>Cr.</i>		
By amusements.....	\$187 83	.....
By alteration and repairs.....	5,402 51	.....
By books, stationery and printing.....	301 09	.....
By drugs and medical supplies.....	973 16	.....
By engines, boilers, machinery and tools.....	607 81	.....
By fuel and heating.....	7,550 26	.....
By farm, barn and garden.....	4,873 83	.....
By household supplies.....	3,098 29	.....
By laundry expenses.....	722 97	.....
By lights, including fixtures.....	612 27	.....
By miscellaneous items.....	1,052 35	.....
By provisions.....	22,827 82	.....
By salaries and wages.....	24,439 91	.....
By mat and basket shop.....	284 69	.....
By patient's clothing.....	2,657 32	.....
		\$75,583 11
Balance.....		\$20,791 12
Less receipts from private patients, sales, etc....		8,005 78
Balance in treasury September 30, 1898....		\$12,705 34

Statistical Tables.

STATEMENT OF MONTHLY EXPENDITURES

At Milwaukee Hospital for Insane for the fiscal year ending September 30, 1898.

Months.	Current expenses.	Improvements.	Total.
October, 1897	\$3,760 69	.....	\$3,760 69
November, 1897	8,187 92	\$600 00	8,787 92
December, 1897	7,087 11	.....	7,087 11
January, 1898	5,820 79	.....	5,820 79
February, 1898	6,075 34	.....	6,075 34
March, 1898	5,870 87	.....	5,870 87
April, 1898	5,524 53	374 30	5,898 83
May, 1898	6,401 61	.....	6,401 61
June, 1898	5,692 60	.....	5,692 60
July, 1898	5,977 29	48 70	6,025 99
August, 1898	5,045 43	129 85	5,175 28
September, 1898	5,138 93	335 08	5,474 01
Total	\$75,583 11	\$1,487 93	\$77,071 04

Statistical Tables.

IMPROVEMENTS.

General improvement account.

1897.			
Oct.	To balance in treasury	\$728 88	.....
	To appropriation by county board	2,500 00	.....
	Total		\$3,228 88
	CR.		
	By bills paid on account:		
	Power house, heating, ventilating, power plant, etc., extras	\$600 00	.....
	Clothes drying grounds	124 30	.....
	Smoke house	18 70	.....
	Beds	361 53	.....
	Brick pavement, between main building and power house	133 40	.....
	Total		\$1,237 93
	Balance in treasury September 30, 1898.		\$1,990 95

Special improvement account.

1897.			
Oct.	To balance in treasury		\$250 00
	By bills paid on account:		
	Power house, heating, ventilating, power plant, etc		250 00

Statistical Tables.

CURRENT COST OF MAINTENANCE.

Supplies on hand October 1, 1897.....	\$1,393 21
Current expenses as per invoices.....	75,583 11
Total.....	<u>\$76,976 32</u>
Less supplies on hand October 1, 1898.....	1,748 90
Actual consumption or current expenses.....	<u>\$75,227 42</u>
Less receipts from private patients, sales, etc.....	8,085 78
Cost of maintenance to Milwaukee county.....	<u>\$67,141 64</u>
Total number of days' board furnished, 138,786 days.	
Weekly, per capita cost on actual consumption.....	3 79
Weekly, per capita cost to Milwaukee county.....	3 39

Statistical Tables.

PRODUCE OF FARM AND GARDEN

Of Milwaukee Hospital for Insane for the fiscal year ending September 30, 1898.

Asparagus	76 dozen bunches @ 50 cents	\$38 00
Beets	410 bushels @ 30 cents	123 00
Beans, green	58 bushels @ 45 cents	26 10
Beef	3,910 pounds @ 6½ cents	254 10
Carrots	560 bushels @ 25 cents	139 75
Currants	40 bushels @ \$2.00	80 00
Cucumbers	102 bushels @ 50 cents	51 00
Cabbage	5,790 heads @ 2½ cents	144 75
Celery	136 dozen bunches @ 30 cents	40 80
Corn	13,841 ears @ ½ cent	69 20
Ensilage	165 tons @ \$2.50	412 50
Egg plant	7½ dozen @ 50 cents	3 75
Hay	15 tons @ \$9.00	135 00
Honey	52 pounds @ 12½ cents	6 50
Grapes	10½ bushels @ \$1.00	10 50
Gooseberries	170 quarts @ 4 cents	6 80
Kohlrabi	27 bushels @ 40 cents	10 80
Lettuce	210 dozen bunches @ 25 cents	52 50
Milk	15,677 gallons @ 12½ cents	1,959 62
Musk melons	190 dozen @ 40 cents	76 00
Oats	1,826 bushels @ 28 cents	511 28
Onions	448 bushels @ 45 cents	201 60
Onions, green	145 dozen bunches @ 20 cents	29 00
Pork	26,505 pounds @ 4¼ cents	1,126 46
Peas, green	31 bushels @ 60 cents	18 60
Parsley	247 bunches @ 2½ cents	6 17
Peppers	3½ bushels @ \$1.00	3 50
Parsnips	137 bushels @ 40 cents	54 80
Radish	96 dozen bunches @ 26 cents	19 20
Rhubarb	143 pounds @ 1 cent	1 43
Rutabagas	49 bushels @ 40 cents	19 60
Spinach	160 bushels @ 30 cents	48 00
Squash	700 pounds @ ½ cent	3 50
Strawberries	741 quarts @ 5 cents	37 05
Straw	30 tons @ \$5.00	150 00
Sugar beets	1,000 bushels @ 8 cents	80 00
Tomatoes	267 bushels @ 25 cents	66 75
Turnips	65 bushels @ 30 cents	19 50
Water melons	120 @ 10 cents each	12 00
Total		\$6,049 11

Statistical Tables.

INVENTORY OF PROPERTY.

Kind and estimated value of property, belonging to Milwaukee Hospital for Insane, September 30, 1898.

Bake oven	\$773 00
Brick cistern	225 00
Clothes drying grounds	124 30
Drugs, medical supplies and fixtures	841 24
Extension ladders	182 50
Electric light plant	7,300 00
Farming implements, harness, etc	2,795 23
Furniture and fixtures	26,051 95
Fire hose and nozzles	1,302 25
Fire extinguishers	500 00
Fever cottage	544 97
Grading and improvement of grounds	3,322 09
Granary	973 37
Hog house	988 07
Hot house	858 11
Ice house	697 34
Ice, lake	193 62
Land ..	10,000 00
Live stock	4,072 60
Library	996 40
Main buildings, barn and farm houses	212,512 26
Power house, boilers, engines, heating apparatus, etc	43,000 00
Passenger elevator	1,456 15
Provisions and supplies	728 41
Patients' clothing	520 49
Plunge bath	178 52
Root-cellar	2,354 70
Silo	540 18
Sidewalks and depot	1,313 72
Sewers	4,006 36
Sun room	1,018 98
Turkish bath	1,019 07
Wood shed	189 03
Wagon shed	517 57
Waterwork telephone	55 65
Total	<u><u>\$332,153 13</u></u>

BIENNIAL REPORT

OF THE

ADJUTANT GENERAL

OF THE

STATE OF WISCONSIN

FOR THE

Two Fiscal Years Ending September 30, 1898.



MADISON
DEMOCRAT PRINTING COMPANY, STATE PRINTER.
1898.



STATE OF WISCONSIN,
ADJUTANT GENERAL'S OFFICE,

MADISON.

September 30, 1898.

TO HIS EXCELLENCY, EDWARD SCOFIELD,
Governor and Commader-in-Chief.

SIR:—I have the honor to submit herewith the biennial report required by law from this department for the period ending September 30, 1898.

As the Wisconsin National Guard and the volunteer regiments from this state in the war with Spain are very closely identified, the work of each, for the period covered by this report, can well be considered jointly but briefly as, by law, this report is limited to fifty pages.

It was the first aim of this administration to follow along the line previously established and place the state troops in the best possible condition for active service. The routine of the annual inspections was changed so that each company was inspected in "heavy marching order." Not only was this required but each man was instructed to carry in his knapsack extra underwear, socks, towels, soap, brush, comb, etc., and to have his mess kit in his haversack. In this way the men were given practical knowledge of some of the things necessary for their care while in the field. In the inspections also the non-commissioned officers were required to take an active individual part and were marked for their efficiency, to teach them the importance of their positions. A general order was issued prescribing just what should be taken in the way of equipment and rations in the event of a call of any kind for

General Report.

active service. The purchase of a field oven for each company was arranged for, regimental officers were urged to make frequent visits to the companies for the purpose of instruction, each company in the state was visited at its home station during 1897 by the Adjutant General, and during the annual encampments of 1897 especial attention was given to guard duty and practical field work. To facilitate the administrative work a complete set of financial, property and record books was provided for each company and regiment.

The value of this preparation and the work of the many men who have labored so many years and so tirelessly in behalf of the Guard was demonstrated when war between this country and Spain was declared. In anticipation of the call of the President for volunteers, it having been decided at Washington that the National Guard should be given the preference, each company, troop and battery commander was asked to ascertain how many of the men of their commands were willing to volunteer. The reply was that every organization would practically volunteer to a man. To save expense of transportation and subsistence of rejected men each company commander was ordered to have his men examined at once by a reputable physician, notified that Milwaukee would be the point of mobilization, and directed to bring all surplus state military property to that point. By way of further preparation the following order and circulars were issued:

STATE OF WISCONSIN.
Adjutant General's Office.
 MADISON, April 22, 1898.

General Orders, }
 No. 5.

General orders Nos. 2 and 4, A. G. O., c. s., are hereby revoked.

Company commanders will at once have all their men examined physically, calling in members of the Medical Department, W. N. G., where they are located at their home stations. Otherwise they will procure the services of a local physician.

If orders are received to assemble for service in the field, conform

General Report.

to General Orders No. 7, A. G. O., 1897, except as to reduced ammunition. Before leaving your home stations a complete list of all state property taken into the field will be made out on the regular property return and held in readiness to be turned over to the Quartermaster General, when required.

Before leaving your stations all service uniforms, rifles and field equipments, not required in the field, and all ammunition in excess of 20 rounds per man will be boxed up and, together with an inventory, shipped to the Quartermaster General at Camp Douglas, Wis. All other property will be left in safe hands.

All state funds on hand will be left in a home bank subject to draft by the Adjutant General. Custodians of such funds will notify the Adjutant General at once of the name of the banks in which such deposits are made, together with a statement of the amount.

By command of the Governor:

C. R. BOARDMAN,
Adjutant General.

STATE OF WISCONSIN,
Adjutant General's Office.
MADISON, April 22nd, 1898.

Circular No. 4.

If called into the field all officers should provide themselves with blankets, including a rubber blanket or rubber coat and, if practicable, a thin single mattress. A canvass about 12 feet square should be provided to roll bedding in and two large trunk straps for securing the same.

In addition to the usual field equipment officers should take an extra uniform, two light negligee shirts, two pairs of shoes, needle book, toilet articles, including razor, camp chair, writing material and a small field desk.

Mounted officers should supply themselves with a horse each, saddle, bridle, halter, saddle blanket and pad, boots and leggins.

Company officers should take a blank book for record purposes, their order book, and morning report book. Each first sergeant should have a roll book and one blank book for emergency purposes.

Regimental headquarters should be supplied with a roster book, a supply of consolidated report blanks and morning report blanks, which have been sent forward to-day, order book, letters sent book, endorsement book, letter file and field desk.

Company officers should arrange to mess with their commands.

Colonels of regiments should provide for a regimental mess in charge of an officer detailed for the purpose. An outfit of granite or tin ware should be furnished.

Adherence to the following suggestions will aid in the maintenance of health.

Do not drink water unless it has been boiled, if in the least doubt.

Avoid the use of alcohol -- internally.

Avoid dampness at all times. Change your clothes the moment they are wet or damp, when practicable.

Be moderate in eating; do not eat heartily when tired or overheated.

Do not eat fruit of any kind, unless perfectly ripe.

Always wear a flannel band over the abdomen.

Avoid excesses of all kinds.

Do not lie on the ground.

By Command of the Governor:

C. R. BOARDMAN,
Adjutant General.

General Report.

STATE OF WISCONSIN,
Adjutant General's Office.
 MADISON, April 22nd, 1898.

Circular No. 5.

For the information of officers having power of certification on vouchers for expenditures on account of equipment of troops and other expenditures which may properly be chargeable to the general government notice is given that the following rules will be observed in the Department of State:

1st. All vouchers will be required to be made in duplicate.

2nd. Sub-vouchers for each expenditure made will be attached to the duplicate vouchers, which will be filed in this department for use in presentation of the State's claim against the government.

3rd. All orders issued on railway companies for transportation of troops will be attached to duplicate vouchers.

4th. Duplicate copies of all official military telegrams should be made and attached to sub-vouchers. This requirement is made for the reason that the U. S. government, in auditing accounts for telegraphic services, requires copies of the telegrams in order that official knowledge may be had of their nature.

By Command of the Governor:

C. R. BOARDMAN,
 Adjutant General.

STATE OF WISCONSIN,
Adjutant General's Office,
 MADISON. April 23d, 1898,

Circular No. 6.

Regimental, company and band commanders before taking the field should see that all accounts against their commands are paid. As it will not be practicable in some cases and perhaps not desirable for them to give up the armories or quarters, they should notify this department at once when their leases expire with the owners of the properties that the State may have the use of the same during the absence of the commands if it so desires. This applies where leases have not expired. If they expire during the absence of the troops in the field the owners should be at once notified to then communicate with this department in regard to a renewal of the same or for such instructions as may be necessary. If leases have expired notify this department and the matter will be attended to.

By Command of the Governor:

C. R. BOARDMAN,
Adjutant General.

The war department having given notice that Wisconsin's quota would be three twelve company regiments of infantry and that Milwaukee would be the point of mobilization Quartermaster General Zwietusch was instructed to put the State Fair Grounds, adjacent to that city, in condition for encamping the troops. All the camp equipage

General Report.

and military property in the possession of the state was then shipped to that place and as the tentage was insufficient it was arranged to quarter a portion of the troops in the various sheds and buildings on the grounds. A large supply of blankets was purchased, hay and straw for bedding procured, wood for cooking purposes obtained, gasoline lamps for lighting the grounds put up, the pumping station for furnishing water supply put in working order, teams for transportation purposes engaged, a telephone system for each regiment and for headquarters arranged for and special trains provided for on the various railroads with arrangements for detraining all the troops from the side tracks at the grounds. A commissary department was then organized, with Colonel M. R. Doyon in charge, and an issue of rations decided upon based upon the ration of the army with a component of soft bread and fresh meat every day, the addition of butter and milk and the occasional issue of canned tomatoes. Provisional orders for all commissary supplies were placed before any orders were issued for the movement of troops and under the direction of Surgeon General Byers medical supplies were arranged for.

On the evening of April 27, final instructions having been received from the War Department, orders were issued to the officers of the 1st, 2nd and 3rd regiments of infantry to join their commands and for the companies to assemble at their armories in the morning ready to take special trains at hours indicated. So prompt was the response to the orders and so complete were the arrangements of the railroad companies that within twelve hours from the time the first train was to move all the troops were on the grounds. Companies "A," "B," "C" and "F," 4th Regiment, were instructed to assemble at their armories in Milwaukee and marched to the camp where

General Report.

they were attached to the 1st Regiment, making it, like the 2nd and 3rd, a twelve-company regiment. This action was in accordance with orders from the War Department. This left at home the regimental field and staff and the four remaining companies of the 4th Regiment, together with Troop "A" and Battery "A." All of these organizations had volunteered but their services were not then required by the government. In selecting the regiments to go and the companies of the 4th Regiment to be consolidated with the 1st Regiment the rule of seniority was strictly adhered to.

Following are the orders governing the work of the encampment while the troops were under the control of the state:

STATE OF WISCONSIN,
Executive Office.
MADISON, April 27, 1898.

Executive Order }
No. 1. }

Brigadier General C. R. Boardman is hereby directed to proceed to Milwaukee, Wisconsin, and assume command of all troops of the Wisconsin National Guard that have been ordered to rendezvous there to be mustered into the volunteer army of the United States. He will establish headquarters on the State Fair grounds where the troops are to be quartered.

In honor of the late Governor Louis P. Harvey, the post will be known as Camp Harvey.

EDWARD SCOFIELD,
Governor and Commander-in Chief.

GENERAL HEADQUARTERS,
Camp Harvey.
MILWAUKEE Co., Wis., April 28th, 1898.

General Orders, }
No. 1. }

In compliance with Executive Order of April 27th, 1898, the undersigned hereby assumes command of this post and the troops of the Wisconsin National Guard quartered here.

The following details are announced:

Colonel Worthie H. Patton, Assistant Adjutant General.

Colonel W. C. Ginty, Aid-de-Camp.

C. R. BOARDMAN,
Brigadier General W. N. G.

General Report.

GENERAL HEADQUARTERS,
Camp Harvey.
 MILWAUKEE CO., Wis., April 29th, 1898.

General Orders, }
 No. 3. }

The following order of service will be observed at this post until further orders:

Reveille — 5:30 A. M.
 Police Call — Immediately after Reveille Roll Call.
 Mess Call — 6:00 A. M.
 Sick Call — 6:30 A. M.
 Officers' Call — 7:00 A. M.
 Guard Mount — 1st Call — 7:45 A. M.
 Drill Call — 8:20 A. M.
 Recall — 11:00 A. M.
 First Sergeants' Call — 11:30 A. M.
 Mess Call — 12:00 M.
 Officers' Call — 1:30 P. M.
 Drill Call — 3:00 P. M.
 Recall — 4:30 P. M.
 Police Call — 4:45 P. M.
 Mess Call — 5:30 P. M.
 Parade — 1st Call — 6:25 P. M.
 Assembly of Battalions — 6:50 P. M.
 Adjutants' Call and Parade — 6:55 P. M.
 Tattoo — 9:30 P. M.
 Call to Quarters — 10:15 P. M.
 Taps — 10:30 P. M.

At the first call for parade, 6:25 P. M., each company will be promptly formed and carefully inspected by the officer in command.

Regimental commanders will confer and agree upon their respective drill and parade grounds.

By Command of General Boardman:

W. H. PATTON,
 Colonel & A. A. G.

GENERAL HEADQUARTERS,
Camp Harvey.
 MILWAUKEE CO., Wis., April 29th, 1898.

General Orders, }
 No. 4. }

Until further orders each regiment will post its own guard.

Guard duty will be by detail, in accordance with the rules laid down in the "Manual of Guard Duty."

The guard of each regiment will have at least twelve posts. The guard lines for each regiment will be designated by the Regimental Commanders.

Regimental commanders will see that special orders, appropriate to the ground and property they are guarding, are issued to their sentinels. Especial care will be taken to guard against fires. They will also see that one orderly is detailed each day from their regiment for General Headquarters.

A provost guard to consist of a provost marshal, at least two lieutenants, the senior to command; one sergeant, three corporals, two musicians and

General Report.

thirty-six enlisted men, will be detailed each day by the Assistant Adjutant General. Details for the provost guard will report at the Post Guard House at 8:00 A. M.

The present post guard house will be in charge of the provost marshal and all prisoners from the different regiments will be sent to that guard house.

All calls will be first sounded from General Headquarters and then repeated at the regimental camps. Commander of provost guard will have the musicians of his guard report to Lieutenant Disch at General Headquarters.

By Command of General Boardman:

W. H. PATTON,
Colonel & A. A. G.

GENERAL HEADQUARTERS,
Camp Harvey.
MILWAUKEE Co., Wis., April 29, 1898.

General Orders, }
No. 5. }

Major John B. Edwards is hereby detailed as post surgeon and will be in charge of all sanitary arrangements of the post. In all matters pertaining to the disposal of garbage and police of sinks he will report to General Zwietusch.

Major H. E. Bradley is detailed in charge of the post hospital, with Captain J. B. Whiting as assistant.

A permanent detail of one hospital steward, two acting stewards and four enlisted men will be furnished on application by Major Bradley to the Assistant Adjutant General.

No sick man will be sent to the Post Hospital unless proper treatment at the Regimental Camp is found impracticable.

Regimental commanders will require a permanent detail to be made of at least two men, from each of their battalions, for hospital corps work. Men so detailed will be required to report forthwith to the surgeon or acting surgeon of their respective regiments.

Requisitions for regimental medical supplies will be made to Major H. E. Bradley at the Post Hospital.

The assignment of Major H. E. Bradley to the 2nd Regiment, Captain J. R. McDill to the 1st Regiment, and Captain A. J. Morse to the 3rd Regiment is announced.

By Command of General Boardman:

W. H. PATTON,
Colonel & A. A. G.

GENERAL HEADQUARTERS,
Camp Harvey.
MILWAUKEE Co., Wis., April 29th, 1898.

General Orders, }
No. 6. }

The rules for "Reveille" will be the same as those in force during the annual encampment for 1897.

At the "Call to Quarters" officers and men will repair at once to their quarters. At "Taps" all lights in the quarters of the men will be extin-

General Report.

guished at once. Lights in officers' quarters will be kept burning only in case of necessity and quietness must prevail.

First Sergeants, after check roll call, will report without delay to their company officer on duty. Company officers will report at once to the regimental adjutant. Regimental Commanders will transmit these reports without delay to General Headquarters.

Not to exceed three (3) passes for any one night will be issued by any company commander and each must be countersigned by the regimental adjutant. Each man leaving camp on a pass will register his name at the guard house of his regiment and upon his return the pass must be taken up. Only the man to whom the pass is issued will be permitted to use it.

All civilians employed about the camp, in any capacity, must have passes signed by the Post Commander or Provost Marshal. These passes will be furnished on application at General Headquarters.

All civilians occupying quarters in the camp must expect to conform to the military rules by which it is governed.

By Command of General Boardman:

W. H. PATTON,
Colonel & A. A. G.

GENERAL HEADQUARTERS,
Camp Harvey.
MILWAUKEE Co., Wis., April 29th, 1898.

General Orders, }
No. 7. }

Company commanders will submit each day with their morning reports, ration returns, showing number of men for which they desire to draw rations. These must be signed by the company commanders and approved by the Colonel. These returns will then be returned to the company commanders who will proceed to draw their rations at the Commissary Store House at the hour appointed by the assistant commissary of subsistence.

They will draw rations each day for the day following. The Colonel will verify the returns from the morning reports before approving them. The acting commissary will inform the Colonel of each regiment of the hour for issuing rations to his regiment and the Colonel will cause companies to draw rations at the prescribed hour.

By Command of General Boardman:

W. H. PATTON,
Colonel & A. A. G.

GENERAL HEADQUARTERS,
Camp Harvey.
MILWAUKEE Co., Wis., May 5th, 1898.

General Orders, }
No. 8. }

Company commanders, as soon as their company has been examined by the Medical Board, will send to their home station all men who have been rejected by the board. A list of such men will be furnished each company commander as soon as a report has been made to the mustering officer by the board. Arrangements for transportation will be made with the Quartermaster General's Department. All men rejected and sent home will leave all their equipments with their company commanders and upon

General Report.

returning home will immediately ship back to the company commander all uniforms or parts of uniforms that they have worn to their homes.

Regimental and battalion commanders will see that this order is promptly obeyed.

By command of General Boardman:

W. H. PATTON,
Colonel & A. A. G.

GENERAL HEADQUARTERS,

Camp Harvey.

MILWAUKEE CO., WIS., May 5th, 1898.

General Orders, }
No. 10. }

As soon as a company has been examined by the Medical Board rations will be issued by the United States Government for a maximum of 81 men to a company only. The three officers, under the regulations, must subsist themselves.

A company commander having more than 81 men passed by the examining surgeons must select the 81 he desires to retain and then send all above that number home with the men who have been rejected or transfer them, should they desire, to other companies that need men. These extra men and the men rejected must be disposed of as soon as possible as they can not be carried on the ration list. Men transferred to another company after examination will not have to be examined a second time.

By Command of General Boardman:

W. H. PATTON,
Colonel & A. A. G.

GENERAL HEADQUARTERS,

Camp Harvey.

MILWAUKEE CO., WIS., Sunday afternoon, May 1, 1898.

To the Officers of the Wisconsin National Guard, in Camp:

Memorandum }

The proximity of Camp Harvey to a large city while it offers many advantages in the matter of providing for the material wants of the troops has disadvantages as well. Many temptations are presented tending to the demoralization of the men, and the infraction of discipline. This fact serves to point out the necessity for a wise interest in the welfare of their men on the part of the officers, and the greatest care as to conduct, while out on leave, on the part of the men themselves.

I am so proud of the quick work done by the troops in mobilizing, all without accident or disturbance, that I am loath to have even the slightest thing occur which shall, in any way, reflect upon the character, disposition or discipline of the Wisconsin troops.

Say to your men that every indiscretion of which they are guilty will not only reflect discredit upon themselves, individually, but will shame the uniform they wear, bring reproach on the state and the National Guard of Wisconsin, and be the cause of deep anxiety on the part of their relatives and friends at home. Please impress upon them therefore that one of the first duties of a soldier is to be a gentleman; and urge upon them a regard for their manhood, for their reputation as soldiers and for the good name of Wisconsin and of her National Guard.

EDWARD SCOFIELD,
Governor and Commander-in-Chief.

General Report.

Special orders were also issued instructing the regimental commanders to take every precaution to prevent fires; leaving the matter of Sunday religious exercises entirely to the regimental chaplains; restricting the use of intoxicating liquor; preventing peddling or the sale of any commodities within the camp; limiting the number of passes to be issued to the men of a company, and arranging for the collection and distribution of mail. Shortly after the camp was established it became evident that most of the men had failed to follow the instructions for each to provide himself with a substantial pair of shoes and it became necessary for the state to make an issue, which was done by the Quartermaster General. Good shoes were obtained for \$1.25 per pair.

Three days after camp was established the physical examination of the officers and men, the surgeons and assistant surgeons having been previously examined, was commenced by a medical board consisting of Lieut. Col. H. R. Tilton, Surgeon General of the Department of Dakota, U. S. A., Dr. J. C. Reynolds of Lake Geneva, Wis., and Dr. G. D. Ladd of Milwaukee, Wis., assisted by the medical staff of the several regiments, and as soon as this was completed the work of mustering, under direction of Captain W. L. Buck, 13th Infantry, U. S. A., with First Lieut. F. M. Caldwell, 7th U. S. Cavalry, as acting quartermaster and commissary, proceeded rapidly. The muster of the several regiments was completed as follows: 3rd regiment May 11th; 2nd regiment May 12th; 1st regiment May 14th. The total strength of each regiment when mustered in was as follows: 1st, 1,029; 2nd, 1,026; 3rd, 1,030.

Each regiment was given the same numerical designation it had borne so many years in the Wisconsin National Guard and on the same day that each regiment was mustered into the service of the United States an order was

General Report.

published mustering it out of the State service, and each officer and man at that time a member has since been given a certificate of honorable discharge from the Guard. In the matter of physical examinations the average percentage of rejections to each regiment was a trifle over eight.

On May 14th the 3rd Regiment left the state for Camp Thomas, Chickamauga Park, near Chattanooga, Tenn. One day later the 2nd left for the same destination, and on the 20th of May the 1st left the state and went into camp at Jacksonville, Fla. All the officers of all three regiments were old Guardsmen, and of the men the number of old Guardsmen in each regiment was about as follows: 1st, 489; 2nd, 553; 3rd, 644. At the outbreak of the war the number of men in each company of the Guard varied from 50 to 65, the latter number being the maximum allowed by law.

Early in June recruiting officers were sent home from the three regiments in the field who enlisted enough men to make the total of enlisted men in each company of each regiment 106. The recruiting was done entirely under the jurisdiction of the United States government and no report has yet been made to state authorities of the number of men thus obtained. It has been estimated at about 900. On June 18th, under the second call of the President for troops made May 25th, the War Department gave notice that one more regiment of infantry with a total maximum strength of 1,326 and one light battery with a total maximum strength of 109 would constitute Wisconsin's quota. On June 24th, a medical board composed of Doctors Philip Fox, E. A. Brown and W. W. Gill, all of Madison, Wis., examined and passed upon the medical officers for the 4th Infantry. As there were only four companies of the 4th Infantry, W. N. G., left, of the many volunteer companies whose services were so patriotically tendered from all parts of the state, the following were selected, the apportionment

General Report.

being based on senatorial districts, and in the selection of companies from these districts the population of the various cities where companies were offered being considered: Waukesha, Stoughton, Platteville, Merrill, Stevens Point, Washburn, Green Bay and Viroqua.

On June 21st the following circular was published:

STATE OF WISCONSIN,
Adjutant General's Office.
MADISON, June 21, 1898.

Circular.

By direction of the Governor I have the honor to notify you that pursuant to instructions from the war department, Wisconsin's quota of troops under the second call will be one regiment of infantry and one battery of artillery. The regiment of infantry will consist of one colonel, one lieutenant colonel, two majors, one adjutant with rank of first lieutenant, one quartermaster with rank of first lieutenant, one surgeon, two assistant surgeons, one chaplain, one sergeant major, one quartermaster sergeant, one chief musician, two principal musicians, three hospital stewards, and twelve companies, each to consist of one captain, one first lieutenant, one second lieutenant, one first sergeant, one quartermaster sergeant, four sergeants, twelve corporals, two musicians, one artificer, one wagoner and eighty-four privates maximum and seventy-eight privates minimum. There will be no battalion adjutants. An effort should be made to have each company up to the maximum which, including officers, is 109.

The regimental non-commissioned staff will be appointed by the colonel. The letter for each company and assignment to battalions will be announced later on.

The mobilization will be at Camp Douglas on or about Monday, June 27. The following conditions will govern the mobilization and muster: From the time of leaving the home station all payment of all officers and men will be by the United States at the government rate, and no payment to any of the officers or enlisted men, including those now in the Wisconsin National Guard, will be made by the state. Transportation will be forwarded in due season by the Quartermaster General. Troops will be subsisted after their arrival in camp by either the State or the United States government. Meals while en route to Camp Douglas must be a matter of individual expense. Officers or companies having any state military property in their possession will bring all of it with them to Camp Douglas. All uniforms, arms and equipments of every kind will be furnished by the United States. Blankets, cooking outfits and dishes for use while at Camp Douglas will be supplied by the state.

Before leaving your home stations it will be necessary for every man under twenty-one years of age to have with him, *in writing*, the consent of his parents or legal guardian to enlist in the United States service for two years. It is not advisable to enlist married men.

It will be necessary for every man to be examined physically before leaving for Camp Douglas. For this work no blanks are necessary. It should be done by a local physician or physicians and *must be without expense to the state or United States*. Physicians will give the men close examinations, see that they are not under weight and have no ailment that will

General Report.

unfit them for service in the field. Careful selection coupled with good judgment is all that is necessary.

The men in companies not having uniforms are advised to wear clothing that they will not care to send back home, as this will save the expense of express charges. Each man should also furnish himself with a dark flannel shirt (blue if possible), two suits of underwear, three pairs of socks, two towels, brush and comb, and supply of needles, pins, thread and buttons for repairs. Each man should also provide himself with a good sensible pair of broad toed shoes.

Under the U. S. Army Regulations all officers are required to purchase their own uniforms and all equipments including, when they are mounted, horse and horse equipment. Officers are allowed about 150 pounds of baggage each. A small trunk or chest can be used to advantage by each officer.

It is advisable if a proper man can be secured that one be enlisted to serve as company cook.

All personal baggage should be carried with the company.

Very respectfully,

C. R. BOARDMAN,
Adjutant General.

On June 29th the eight volunteer companies were mobilized at the Wisconsin Military Reservation at Camp Douglas, and a few days later they were joined by the four companies of the Guard and Battery "A," all of which had been on active duty at Oshkosh. The same officers were in charge and the same methods were followed as at Camp Harvey excepting that the United States furnished the subsistence from the beginning, the state adding a daily issue of butter and milk, which was continued as long as the regiment remained in the state. As at Camp Harvey the work of mustering was in charge of Captain Buck, with Lieutenant Caldwell as acting quartermaster and commissary.

On July 9th, Light Battery "A," 109 strong, was mustered into the service of the United States, and on the 11th the 4th Infantry was mustered in, its total strength being 1,300, so that up to this date Wisconsin furnished for the war with Spain about 5,392 officers and men.

On September 14th the 4th Infantry left the state and went into camp at Anniston, Alabama, where it is still stationed at the date of this report.

General Report.

On May 18th Colonel W. J. Anderson of the staff was detailed to visit the 2nd and 3rd regiments in camp at Chickamauga Park and look after the interests of the Wisconsin troops. He found the 2nd regiment short of tentage and unable at that time to draw any more from the government. On his reporting this fact thirty additional tents were at once shipped to Colonel Born by the state. He also found both regimental hospitals in need of supplies that the government seemed unable to furnish then and he immediately purchased some spring cots, mattresses, towels, sheets and dishes for the use of the sick, and before he left had the hospitals well equipped. As there were then some sick among the Wisconsin men this action on his part was very timely.

On May 26th, the Adjutant General, acting under orders, visited the camp of the 1st regiment at Jacksonville, Fla., and distributed the parchment commissions of the officers, which had been made out as soon as practicable after the muster, and took up the temporary paper commissions. Here, too, the regimental hospital was found in need of cots, pails, dishes and other conveniences not furnished by the United States, which were at once purchased for the regiment by the representative of the state. Two more tents for hospital purposes were also needed by this regiment and were immediately shipped to it from Wisconsin by the state authorities. On the 28th and 29th of May the Adjutant General visited the camp of the 2nd and 3rd regiments at Chickamauga Park and gave the officers of the two regiments their parchment commissions. These regiments at this time were not found in need of further help from the state.

The last week in June Colonel W. H. Patton, Assistant Adjutant General, was sent to the southern camps where he presented each of the Wisconsin regiments with a beau-

General Report.

tiful stand of colors purchased for them by the state. He examined into the needs of the several regiments but found nothing wanted at that time that the state could supply. He also collected from the paymaster general's department \$21,109.64 which the state had paid the enlisted men for their service at Camp Harvey, Wisconsin, previous to the date of muster,

On July 26th Surgeon General F. W. Byers was ordered south where he carefully inspected all the hospitals where Wisconsin soldiers were being treated. He did not find the sick at that time in need of assistance from the authorities.

A cessation of hostilities having been agreed upon the War Department gave notice that the 2nd regiment had been ordered home from Porto Rico to be mustered out and that the 1st regiment, still at Jacksonville, had been selected to be mustered out. Being informed that the percentage of sickness in both regiments was very large the Governor and the Adjutant General, on September 1st, proceeded to Washington and interceded with the War Department for prompt action. The orders were for the 1st and 2nd regiments on their return home to be given one and two months furloughs respectively, and at the expiration of that time to assemble at Camp Douglas to be mustered out.

There seemed to be much unnecessary delay in getting the 1st out of its unhealthy camp at Jacksonville and it was feared that to have the regiment go into camp in October and November, when the weather is liable to be severe would subject the men to unnecessary exposure. The orders also contemplated having both regiments go into camp immediately after their arrival in the state, there to make out the muster-out rolls, transfer all government property and check up accounts before the furloughs

General Report.

were given. This it was felt would be a hardship for the men on account of the large amount of sickness in both commands and would result in an increase of the sickness if not in deaths. The War Department was asked to modify this plan, which Adjutant General Corbin readily assented to and agreed to the following:

The 1st Infantry, Wis. Vols., to be moved at once from Jacksonville to Milwaukee, the companies of that regiment to be sent direct from that city to their home stations.

Chaplain Charles E. Varney of the 1st to be detailed to remain with the sick of the 1st Regiment unable to travel.

The sick in each regiment able to travel to be furnished with standard Pullman sleepers, surgeons, nurses and ample food and medicines.

The 2nd Regiment, on landing at New York, to be sent right through to Milwaukee without detention.

On arrival at Milwaukee the sick of both regiments, not able to travel further, to be placed in hospitals in that city, their care to be paid for by the United States at the regulation rates of the hospitals.

A plan of mustering out the regiments by companies at their home stations to be formulated by the mustering-out officers, subject to the approval of the War Department.

All the details of this plan having been provided for, the Governor met the returning regiments at Milwaukee, while the Adjutant General accompanied the sick of the 1st home from Louisville, Ky. In receiving the 2nd at New York the Governor delegated Herman Erb, Jr., of Appleton, Wis., and Charles Oellerich, of Oshkosh, Wis., to represent him. On arrival at Milwaukee the soldiers were given a magnificent reception by the citizens and every attention was paid to the sick and the well. Under direction of Quartermaster General Zwietusch special trains were arranged for and the companies sent to their homes without delay. Three companies of the 2nd which came from Porto

General Report.

Rico later were cared for in the same manner and additional sick sent home from Jacksonville, after the regiment left, were met by physicians, sent by the Governor, who gave the men every attention they could. Many of the men of these regiments were found on their return to be in destitute circumstances. They had received no pay for more than two months. When advised of this the Governor promptly interceded with the War Department regarding immediate action.

Following is a brief sketch of the records of the volunteer regiments from Wisconsin up to the time of making this report. The information has been obtained from officers of the different organizations, as no official reports or papers of any kind have been sent to the office except the first muster rolls.

FIRST REGIMENT INFANTRY, WISCONSIN VOLUNTEERS.

The 1st Regiment arrived at Jacksonville, Fla., at 3:20 A. M., May 23, and pitched camp on a tract of reclaimed swamp land. It was assigned to the 2nd Division of the 7th Corps. For some time after its arrival heavy rains fell daily flooding the grounds each day. The routine of camp life then followed. June 8th the regiment was reviewed by General Lee and highly complimented for its fine appearance. On June 14th occurred the first death in the regiment, that of Private Chappel of Co. "D." On June 16th a picked company of eight men from each company in the regiment, under the command of Captain Vowell, participated in the unveiling of a Confederate monument. On July 13th Sergeant Scott, Co. "F," died at the Division Hospital, and from this time on typhoid and malarial fever began to prevail in the regiment. July 29th the camp was moved to a location about a mile distant as it was thought a change would benefit the health of the regiment. The

General Report.

sickness, however, increased, and on August 29th the regiment was ordered to move on the 30th to Pablo Beach. Having received orders to proceed to Wisconsin for the purpose of being mustered out the regiment broke camp September 6th and on the morning of September 10th reached Milwaukee, from which place the companies were sent by special trains to their home stations and the men given thirty days' furloughs previous to muster out.

SECOND REGIMENT INFANTRY, WISCONSIN VOLUNTEERS.

The 2nd Regiment left Camp Harvey, Wis., May 15th for Camp George H. Thomas, Chickamauga Park, arriving there May 17th, going into camp and being brigaded as 3rd Brigade, 1st Division, 1st Corps, with 16th Penn. and 157th Ind.; later the Indiana regiment being withdrawn and the 3rd Ky. substituted. Remained at Chickamauga Park until July 5th. During the month of June regiment was recruited up to the maximum strength allowed by law, 50 officers and 1,276 men.

July 5th 36 officers and 844 men left Chickamauga Park for Charleston, S. C., being transferred to 1st Brigade, 1st Division, 1st Corps. The 2nd Wisconsin was one of the first regiments ordered from the park for foreign service. Arrived at Charleston July 7th and were quartered in three large cotton warehouses, remaining at Charleston until July 19th- There were 14 officers and 434 men left at Chickamauga Park; this number including all the sick and recruits. July 13th all officers and men left at the park, except the sick, joined the regiment at Charleston.

July 19th 40 officers and 1,138 enlisted men went aboard transport, La Grande Duchesse, bound for Porto Rico. July 26th transport arrived at Guanica, P. R., lay at anchor until morning of 27th, when she steamed to Ponce, P. R., and regiment disembarked and went into camp about one

General Report.

mile outside of city limits of Ponce. August 7th 10 companies of regiment broke camp and marched $10\frac{1}{2}$ miles on Ponce and San Juan road, and went into camp between Juana Diez and Coamo, two companies, "C" and "H" having been previously ordered on detached service, "C" to Adjuntas for outpost duty, and "H" to Juana Diez to guard supplies. August 8th regiment left camp in light marching order at 6 A. M. and proceeded across country toward the Saint Isabella road. About $\frac{1}{2}$ mile from camp the first battallion was formed as a firing line, with second and third battalions in rear as reserve. In this formation, after the destruction by the battery of a block house, which checked their advance, they reached the Saint Isabella road. The regiment was then reformed and proceeded to Coamo and went into camp just beyond the city. Remained in camp near Coamo until August 27th. Cos. "C" and "H" rejoined the regiment August 12th.

August 12th Cos. "I," "K," "L" and "M," comprising the third battallion, were detailed as advance outpost between Coamo and Aibonito. They returned to camp August 19th.

August 27th the regiment broke camp and proceeded towards Ponce, arriving at Juana Diez and bivouacing for the night and on the 28th marched to the old camp near Ponce, going into camp under orders to board transport Obdam as soon as ready to go to the United States to be mustered out. August 31st nine companies of regiment boarded Obdam; there not being room for the whole regiment and Co's "F", "G" and "H" were left in camp to take transport later, under command of Major Gruetzmacher. Nine companies with the commanding officer aboard Obdam arrived in New York September 7th, went aboard trains and arrived in Milwaukee September 9th. Co's "F", "G" and "H" boarded transport Alamo Sep-

General Report.

tember 8th and arrived in New York September 16th and in Milwaukee on September 18th.

THIRD REGIMENT INFANTRY WISCONSIN VOLUNTEERS.

The 3rd Regiment, Wisconsin Volunteers, left Camp Harvey on May 14th and reached Camp George H. Thomas, Chickamauga Park, Ga., on the 16th of May. The stay of the regiment at Chickamauga Park was seven weeks and during this time its twelve companies were recruited from 84 to a total strength of 100 officers and men each. On the 5th day of July the regiment was brigaded with the 2nd Wisconsin and 16th Pennsylvania, with General Ernst as brigade commander. The entire brigade marched twelve miles to Ringgold, Ga., where it was entrained for Charleston, S. C., where it remained from July 7th to the 21st. From Charleston the regiment was ordered to report to General Miles and join with other forces for the conquest of Porto Rico. The Obdam, carrying General Wilson and staff and the 3rd Wisconsin, the Duchess, carrying General Ernst and staff, and the 2nd Wisconsin, and the Mobile, with the 16th Pennsylvania on board, steamed into the Port of Ponce the morning of Thursday, July 28, 1898. These troops under command of Major General Wilson and Brigadier General Ernst were the first troops landed at the Port of Ponce. The 3rd Wisconsin was the first regiment to disembark at the Port, the first to seize and hold the highway extending four miles from the Port to Ponce and the first to enter and hold the city of Ponce. The advance into the interior of the island was commenced August 7, 1898. On Tuesday, August 9th, the Third met the enemy in a slight skirmish at the block house before Coamo, and later on the same day its movement upon Coamo caused the Spanish garrison of 300 men to fall back towards San Juan. In this retreat the Spanish troops were intercepted

General Report.

by four advance companies of the 16th Pennsylvania. A lively skirmish occurred and the Spanish loss was two officers killed, several men wounded and 150 taken prisoners. The last active campaigning for the Third was about five miles beyond Coamo in the valley before Aibonita Pass. In this valley it had one battalion. During the four days of its campaign in this valley repairing and protecting bridges, reconnoitering the enemy's position, the battalion engaged the Spanish twice in skirmish. Friday, August 12, while acting as support in a spirited artillery action it lost two men from Co. "L" by the bursting of a shell, Corporal Oscar R. Swanson was instantly killed, and Private Fred Vought was mortally wounded. Saturday, August 13th, the regiment was actively preparing for a forward movement with the rest of the brigade to make a flank attack upon the Spanish position. On the same day, as soon as the orders from President McKinley came declaring that hostilities must cease, the 3rd Wisconsin returned to its camp near Coamo, where it remained for garrison duty through the following month of September.

Wisconsin has many reasons to be proud of the patriotism and efficiency displayed by the Wisconsin National Guard and proud of the regiments which the state sent to the front. From the time the war broke out the people of Wisconsin displayed the utmost patriotism and their solicitude for and care of the soldiers of this state has been generous and constant. That many have been willing and ready to enlist in the ranks and fight under the flag is evidenced by the fact that since the war began the services of three volunteer regiments have been tendered the state. In addition to these 147 independent companies have been offered and 888 individual tenders of service have been received, a great many of these being offers to raise companies. Moreover 222 doctors have tendered their assist-

General Report.

ance to serve as surgeons and assistant surgeons and 44 ministers have offered to accept appointments as chaplains. These are the offers received in writing. Many more verbal offers were received. Nor have the women of the state been less interested. Eighty-five volunteered individually to go as nurses, and the Wisconsin Division of the Red Cross tendered its services. Many more offers of this kind would doubtless have been received had it not been announced at the outset by the War Department that women nurses would not be allowed in the camps, a policy which future developments has served to show was not conducive to the best care of the sick. Many contributions of lint, bandages and other useful articles have been received from the women of all parts of the state and forwarded to the troops. Deep interest, anxious concern and constant watchfulness for the welfare of Wisconsin's soldiers has been shown at all times by our entire people.

ACTIVE SERVICE.

Since January 7, 1897, two calls have been made for the use of troops within the state. On October 18, 1897, the sheriff of Fond du Lac county notified the Governor that he had arrested and confined in the jail at Fond du Lac a man by the name of Payne who had committed murder in that city; that there was some excitement on account of the deed and that it was possible that an attempt at lynching might be made. In the event of any danger he stated he would call on the state for assistance. The Adjutant General having been ordered to Fond du Lac conferred with the sheriff and the mayor of the city. Although there did not appear to be any evidence of any particular danger of an attempt at lynching at that time, it was thought best by all, in order to avoid any possible trouble, to transfer

General Report.

the prisoner to the jail at Oshkosh, which was done. No troops were under orders although the captains of Cos. "B" and "F" at Oshkosh were warned to be in readiness in case of a call, and arrangements were made with the C. & N. W. Railroad for the prompt transportation of the companies if called out.

On June 23d the mayor of Oshkosh and the sheriff of Winnebago county, called on the state for assistance to prevent rioting and to protect property in Oshkosh. The trouble there grew out of a strike of the machine wood-workers in the sash, door and blind factories of that city. The two officials both stated they had exhausted their authority and were unable to enforce the laws and maintain order. A member of the staff having looked over the situation reported to the same effect. That day it was represented a mob had taken possession of a part of the city, and denied admission to one of the factories to not only some of the men employed there but also to the proprietors themselves. Later it was reported that at another factory a collision had occurred, which the police and sheriff's deputies were unable to control, and that during this melee one boy was killed and several people badly injured. On the representation that further trouble was imminent and that protection by the state was absolutely necessary, the Adjutant General and Acting Assistant Adjutant General, Col. W. C. Ginty, were ordered by telephone to proceed to Oshkosh with Cos. "D," "E," "G" and "H," of the 4th infantry, Colonel H. M. Seaman, commanding, Troop "A," Captain W. J. Grant commanding, and Battery "A" in command of Captain B. H. Dally, the Adjutant General to use his judgment in maintaining order. At 10:30 that evening orders were issued at Milwaukee for the assembling of the troops. In two hours they were all assembled, equipped, supplied with one day's rations and ready

General Report.

to entrain. Battery "A" was armed with Springfield rifles and two Gatling guns. Before 5 o'clock the next morning the troops were stationed around the various factories in Oshkosh which were supposed to be threatened. These troops were on duty there until June 30th, and maintained perfect order during the entire time. The conduct of the officers and men was highly satisfactory and the discipline was admirable. While the troops were on duty there were no riotous demonstrations and not a shot was fired or a person injured. During this tour of duty the possession of field ovens by the different companies was found to be of great advantage, as it enabled the men to subsist themselves. Had it not been for this, owing to the different stations of the companies, the matter of subsistence would have been a much more difficult problem. As it was, a regular issue of rations based on the army ration, with the addition of butter and milk, was made each day under the direction of the Quartermaster General. As at the mobilization of the troops at Camp Harvey, the railroad officials were found prompt in all their work in connection with this service, never failing to furnish all the facilities asked for, and doing all in their power to aid the officers to execute their orders.

NEW COMPANIES.

The second call for volunteers for the war with Spain, having taken the last of the companies of the Wisconsin National Guard and Battery "A," only Troop "A" remained. For the protection of the state the organization of a new force was at once commenced. Of the many companies offered twelve were accepted to constitute what is now known as the 5th Regiment Infantry, Wisconsin National Guard.

General Report.

The station of each company, its strength at date of muster, etc., is shown as follows:

Company.	Station.	Date of muster.	Strength.
"A."	Rice Lake	July 27th	85
"B."	Eau Claire	July 25th	68
"C."	Milwaukee	July 28th	68
"D."	Ashland	July 28th	51
"E."	Kenosha	Aug. 12th	59
"F."	Reedsburg	July 25th	68
"G."	Milwaukee	Aug. 1st	59
"H."	Rhineland	July 30th	60
"I."	Chippewa Falls	July 26th	62
"K."	Waupaca	July 28th	53
"L."	Port Washington	July 25th	53
"M."	Oconomowoc	July 25th	68

These companies have been equipped with rifles, bayonets, scabbards, belts, ammunition, blouses, trousers and caps. The state now has sufficient blankets and field ovens for their use should they be called out for service in the state. Requisitions have been made on the War Department for other supplies so that it is expected this new regiment can in a short time be fully equipped. No regimental band has been mustered in nor has the regimental organization been perfected. It has been deemed best not to proceed with this work as the old companies of the Guard appear about to be mustered out of the service of the United States. In this event some, if not all, will desire to return to the Guard. Should they so elect they are certainly entitled, in my judgment, to their old places and the new companies have been mustered in on the express condition that if the old companies again desire to do state service the new companies will be mustered out wherever such action is necessary to make room for the old organizations.

The aggregate strength of the Wisconsin National Guard is at present as follows:

Staff	23
5th Infantry	772
Troop "A"	56
Total	856

General Report.

LEGISLATIVE.

During the session of the legislature for 1897 four bills relating to the Wisconsin National Guard became laws:

Chapter, 49 laws of 1897, set aside a quarter of a section of state land and made it a part of the Wisconsin Military Reservation at Camp Douglas.

Chapter 162 amended the laws of 1893 by increasing the number of men permitted to a regimental band from 24 to 26; by providing a penalty of imprisonment in the county jail, in addition to the fine before provided for, for not less than ten nor more than sixty days, for the improper retention or the misuse of state military property; by providing for the rental of a proper place for the storage and care of state property of the regimental bands and allowing \$100.00 per annum for the payment of the rent; by providing for the use, if thought necessary, of a part of the annual appropriation for the care of the Wisconsin Military Reservation at Camp Douglas for the purchase of additional land for that reservation; by regulating the matter of the insurance of state military property in the custody of the several companies and regiments; by increasing the annual allowance for horse hire to the Troop and Battery to \$1,500.00 for each; by regulating the employment of help in the departments of the Adjutant General and the Quartermaster General. This chapter also provided for a board of visitors, to visit, once each summer while in camp, the Wisconsin National Guard and observe its condition, equipment, instruction and discipline and report to the governor. The board must be composed of two members appointed biennially from the assembly by the speaker, two from the senate appointed biennially by the lieutenant governor and two to be appointed annually at large by the governor. The members of the board receive no compensation, except expenses, and their duties

General Report.

are somewhat similar to the duties of the board of visitors to West Point.

Chapter 178 appropriated a sum not to exceed \$1,000 to be used, by the governor, when deemed advisable, for the purchase of additional land for the Wisconsin Military Reservation at Camp Douglas. It also provides for the condemnation of land adjacent to the reservation that may be necessary for the use of the state for military purposes.

Chapter 204 provides for the defense of any member of the Wisconsin National Guard prosecuted for any act performed while in the performance of his military duties. All of this legislation was largely formulated by a committee from the officers association of the Wisconsin National Guard.

INSPECTIONS.

The inspections for 1897 and the few in the spring of 1898 were made by First Lieutenant F. M. Caldwell, 7th Cavalry, U. S. A. The camp inspections for 1897 were conducted by Captain E. P. Andrus, 5th Cavalry, U. S. A., assisted by Second Lieutenant Henry M. Dichmann, then unassigned, but now of the 7th Infantry, U. S. A., who kindly volunteered his services. The form of inspections was changed somewhat by requiring the companies to turn out in complete heavy marching order; by adding guard duty to the work and by marking each company on the efficiency of its non-commissioned officers. The scale of marking as regards the total was unchanged but some of the values were rearranged. Owing to these changes and perhaps somewhat to the fact that the markings were by an officer new to the Guard the average standing of the companies was not quite so high for 1897 as for 1896. However, the companies as a whole made an excellent showing which, in comparison to the work of the previous years, was satisfactory to those most interested.

General Report.

The changes made in the form of inspections appeared to meet with general approval as the practical lines along which they ran seemed to immediately recommend them to both officers and men. In April the inspections for 1898 were begun. Ten companies of the 3rd Infantry had been inspected when the outbreak of the war stopped the work. In the opinion of officers competent to judge the system of inspections so long in vogue in Wisconsin has been of great assistance in raising year by year the standard of the Wisconsin National Guard. It is my opinion that it should be continued not only along the lines laid down heretofore, but also by adding to the system so as to include in the competitive markings not only the result of the armory inspections but also the work of each company during the annual encampments. Following the same idea the system could be well extended to include a competitive marking of each battalion and regiment. I am firmly of the opinion also that Wisconsin's method of having all the inspections conducted by officers of the United States Army is of the best and should be adhered to. Could more army officers be detailed to work with the Guard it would be better and this plan could be well supplemented by the detail of old reliable non-commissioned officers from the army to visit and work with the non-commissioned officers and men of the state companies at their home stations. The closer the touch between the Guard and the Army the more the benefit will be that can be derived by the former. Wisconsin has been very fortunate in the details made from year to year by the War Department, and 1897 and 1898 have witnessed no exceptions to this experience. Lieutenant Caldwell has shown himself to be an officer thoroughly posted in all his work and possessed of excellent judgment. His sound common sense has been repeatedly shown by the practical manner in which he has always conducted his work and he has greatly aided in

General Report.

eradicating the idea, too often predominant, that show should dominate in the work of state troops. He has the faculty of appealing to officers and men in a manner that secures their hearty co-operation without detracting at all from his ability to enforce discipline and to command respect. Captain Andrus by his good work added to the excellent record he has always made when on duty in this state and Lieutenant Dichmann, just from West Point, gave valuable assistance in instructing the various details for guard duty during the tour of encampments.

ENCAMPMENTS.

The encampments for 1897 were held at about the same time as in previous years and for the usual number of days for each regiment. No United States troops took part in any of the camps nor was a military post established. The work for the time covered was outlined in a general order and was the same for each regiment. It was thought this order was made sufficiently broad to allow the colonel commanding each regiment enough latitude to inject some personality into the work of his command. In this respect, however, it failed completely, probably from a failure on the part of commanding officers to understand just what was intended. Certain days, for example, were designated for field exercises, it being intended that commanding officers should select the work for the day, using their own judgment as to that which they might deem best. The order was not carried out in this spirit but instead resort was had to the Army Officers and others who practically outlined the program for such days and consequently as no especial preparation had been made this necessitated the use of considerable time for explanations. The work consisted chiefly of non-commissioned officers and officers' patrols, which resulted in some excellent maps being made of the country for a

General Report.

radius of nearly two miles from the reservation, in outpost duty, advance and rear guards, and a slight attempt at extended order. The main features of the encampments were the rapid and satisfactory improvement in guard duty by each regiment and the advancement in the matter of discipline. Not only did the regiments which had been rated high in this respect improve but the 1st Infantry which had deservedly been severely criticised before came up with a bound so that at the end of its tour of duty it had made rapid progress toward overtaking the other commands. Companies "A," "B" and "E," 1st Infantry, which the summer before had practically spoiled the record of the regiment, made very decided improvement, officers and men appearing to realize the extent of previous shortcomings and striving to atone for the past.

Troop "A" and Battery "A" encamped with the 4th Infantry. Both organizations did excellent work meriting a continuation of the praise they have from time to time received from those high in authority. A new range was cleared for the Battery which was given target practice at over a mile range with both shell and shrapnel and with good results.

I am led to believe from the experience of 1897 that to obtain the best results from the annual encampments they should all be dominated by one central authority and that all the work should be carefully planned and the details minutely worked out before the troops are on the grounds so that none of the time, now too short, will be wasted in preparing for that which can be better arranged for in advance. I believe also that a complete issue of shelter tents, transportation facilities and all the equipment needed for practice marches should be obtained as soon as practicable so that the monotony of camp life, from one season to the other, can be varied by giving each regiment an oppor-

General Report.

tunity to grapple with and solve some of the problems which are sure to confront it when it takes the field for active service. I believe also that the method now in vogue of subsisting troops at our state encampments is wrong. In place of it the state should issue the rations in bulk, adhering as closely as practicable to the Army ration, to a regimental commissary who in turn will issue them to the companies. At the close of the encampment the cost of the rations can be deducted from the \$2.00 per day paid each man. I believe this can be handled so as to decrease the cost to the men of their week's subsistence and at the same time, which is of much more value, it will teach officers and men to conform to the methods in use in the Army and which are now applied to all troops on entering the service of the United States. It will not be necessary to adhere too strictly to the "Army ration." The deviation can be sufficient to cater to the comfort and the pleasure of all and still be very slight. Each regiment should also conduct a regimental mess under the same conditions that it would be run in the field. Let the same rules apply to the quartermasters and medical departments. The education thus given officers and men will be valuable in the event of any active service. Should the National Guard system continue to be considered as a part of our means of national defense such a plan worked out in detail and closely followed would make it more effective. Had it been followed in all the states in the past one source of severe criticism of the Guard since the beginning of the war with Spain would not have existed.

A brigade encampment with extensive exercises in field work had been planned for 1898 but the war prevented its being held.

General Report.

SMALL ARMS PRACTICE.

This branch of the work has been handled with the energy and enthusiasm which Colonel George Graham, I. S. A. P., has always displayed and has been gratifying in its results as thirty of the forty infantry companies showed a net gain as a result of their practice. The percentage of gain for each regiment, as shown by the total scores made on the range in 1897, was as follows: 1st Inf., .094; 2nd Inf., .262; 3rd Inf., .175; 4th Inf., .179. The beneficial effect of persistent gallery practice was shown in the case of Co. "L", 3rd Inf., which won fourth place in the state by its aggregate score, showing a high average and yet no one man's score was high enough to make him a member of the class composed of the 36 men in the regiment with the highest scores. If the Springfield rifle is retained as the arm for the Guard, and for state work it is better than the more modern gun, I am satisfied that more attention should be paid to gallery practice and to preliminary practice on the range with the reduced ammunition furnished by the state and which is loaded with 30 grains of powder and the carbine bullet. This ammunition has been tested and found to be very accurate even up to 150 yards. No recruit should be allowed to shoot the service charge until he has had a thorough course in gallery practice and has shot at least one score at 100 yards with the reduced ammunition. By the enforcement of this rule recruits will become thoroughly accustomed to the rifle and better prepared for the recoil from the service charge. Hurrying recruits to the range without preliminary practice has ruined the chances of many to become good marksmen. On account of the lack of range facilities at the home station a part of this preliminary practice must be had in camp. A separation of the men at the start into classes containing

General Report.

the experienced and the inexperienced men would have beneficial results. If the Springfield rifle is retained, the new rules in force in the Army and adapted to the Krag-Jergensen rifle should, in my opinion, be adopted by the Guard so far as they can be made to apply to the arm used by the state troops.

WISCONSIN MILITARY RESERVATION.

Since the last report from this department some important improvements have been made at the Military Reservation at Camp Douglas. The principal one has been the erection of a large brick ordnance and quartermaster's depot, in which all the military stores of the state are stored and which is now made the distributing point for all the supplies sent out. This change makes it easier to handle the material than it was when the quartermaster's department was confined to the close quarters formerly occupied in the Capitol building. It is also more economical for the state as it saves draying all shipments to and from the depots. A side track has been built by the railroad companies to the building, so that car load lots are now delivered on the grounds and all teaming necessary is done by a team owned by the state and kept constantly on the reservation. The new building was found especially useful when the exchange of about 1,600 old rifles for the new Springfields was made with the government, and the issue of new guns made to the infantry companies. An exchange of several hundred pieces was also made with the G. A. R. posts of the state at the same time. During the mustering in of the 4th Wis. Vols., and Battery "A," and the subsequent encampment of that regiment and battery on the reservation, the building was found to be almost invaluable. The plans for the building were obtained by Major C. R. Williams, of the Quartermaster General's Department, without expense to the state, and its erection

General Report.

was under his supervision. It is a creditable piece of work in every way and though well built was not expensive.

Since the last report forty acres of land have been added to the reservation by the legislature and forty more have been added by the gift of a like amount from the North-Western Real Estate Co. It is also thought that forty acres more, that are adjacent to it, belong to the state and can be set aside for military purposes, at the next session of the legislature. This, with the laws that have been passed for the acquiring of additional land when needed, should ensure all the extensions that will be needed for a long time to come. By an arrangement with the officers, who built on the grounds what is known as the "Club House," title to the building has passed to the state. It has been thought best to use this in the future for a range house and to move the present range house from its location to the line now occupied by the present headquarters buildings. The range house where it now stands is in a dangerous position and is not only in the way of range work but interferes with the maneuvering of troops. With this building out of the way one of the largest and best drill fields in the country will be provided. This summer the pumping station and bath house for enlisted men burned to the ground. The fire caught in the roof near the smoke stack and could not be reached until it was beyond control. The full amount of the insurance, \$950, was collected. The pump was uninjured and the iron tanks can be repaired and used again. When a new plant is built I would suggest that the pumping station and the bath house be separated; that they be made fire proof and large enough for all future needs. In fact from now on the improvements made on the reservation should be with a view to permanency and also with a view to keeping pace with the growth of the state and the development of the Guard. The camp proper should be moved back to the high ground near the

General Report.

entrance to the reservation so that more room can be had for handling the troops and where better drainage can be obtained. As the frame buildings become out of repair they should be replaced with larger buildings which it will in the end be economy to build of brick. Permanent drive ways and walks should be laid out. In this reservation the state has one of the finest pieces of ground for the purpose in the country. It is really almost ideal. It has been suggested that in honor of the memory of the man who procured this for the state, General Chandler P. Chapman, an attempt be made to have the name of the post-office there changed from Camp Douglas to Camp Chapman. It is a proposition worthy of serious attention and one that has the hearty support of the entire Guard.

TROOP "A."

In 1896 this body was reported as "struggling for existence." It has won the struggle and is now in a prosperous condition. The result is due to the intelligent and energetic work of Captain W. J. Grant who has spent a large portion of his time and made many personal sacrifices in behalf of the organization he so ably commands. Since January, 1897, Troop "A," 1st Cavalry, W. N. G., has had an average active membership of sixty-two. Besides maintaining its old quarters in the Light Horse Squadron Armory in Milwaukee it has established a military camp in the suburbs of the city by enclosing a plat of six acres of land and building thereon complete, commodious stables for sixty horses, barracks for the men and cottage for the guards. It has purchased forty-five horses and two mules for the exclusive use of the Troop under the same conditions that govern the purchase and maintenance of animals in the United States Army. This, so far as known, is the only troop of the National Guard in this country to use its own troop horses and use them for nothing but cavalry

General Report.

service. The annual tour of duty in 1897 at Camp Douglas, the response of the Troop for active service at Oshkosh and the practice march of September of this year, were all performed with full ranks and were alike creditable to the state and to the Troop. During the last sixteen months the Troop has marched a trifle less than 400 miles through the state for practice. It is believed to-day that this body in membership and fitness for service is the equal of any National Guard organization of a similar kind in the United States.

FINANCIAL.

Expenditures.

The following is the statement of all expenditures of the Adjutant General's Department for the two years ending Sept. 30, 1898. Those in the Quartermaster General's Department will appear in the Quartermaster General's Report.

	Oct. 1, 1896, to Sept. 30, 1897.	Oct. 1, 1897, to Sept. 30, 1898.
Armory Fund.....	\$15,900 00	\$16,300 00
Clothing Fund.....	11,870 00	11,580 00
Pay of troops in camp.....	41,433 20	74 44
Extra allowance for Cavalry and Artillery.....	600 00	*3,000 00
Regimental Headquarters expense.....	400 00	300 00
Expenses, Board of Visitors.....	320 00	.....
Salary, Chas. King, Adjutant General.....	522 21	.....
Expenses, Chas. King, Adjutant General.....	73 70	.....
Salary, C. R. Boardman, Adjutant General.....	1,500 00	2,000 00
Expenses, C. R. Boardman, Adjutant General.....	98 12	351 86
Salary, W. H. Patton, Asst. Adjt. General.....	1,444 99	1,400 00
Expenses, W. H. Patton, Asst. Adjt. General.....	25 20	71 77
Salaries, Clerks Nat. Guard Division.....	1,830 06	2,040 00
Salaries, Clerks Vol. Service Division.....	3,523 30	1,200 00
Salaries, Clerks Pension Division.....	2,055 00	2,580 00
U. S. Army Inspector.....	.....	786 27
Col. W. C. Ginty, A. D. C., expenses.....	34 50	.....
Gen. F. W. Byers, expenses.....	39 46	.....
Major T. W. Evans, expenses.....	.....	3 00
Captain G. H. McNeel, expenses.....	.....	10 50
Printing.....	497 71	382 96
Postage.....	452 27	514 50
Telegraph and telephone.....	82 78	†385 48
Expressage.....	50 77	82 39
Drayage.....	50	.....
Freight on books.....	.....	11 62
Books.....	.....	212 08
Paper.....	.....	62 50
Recording deed.....	.....	50
Carriage.....	.....	3 00
Total.....	\$82,753 66	\$43,354 87

* Increased by legislative enactment.

† This increase was caused by the war with Spain but was not kept as a separate account.

General Report.

WAR WITH SPAIN.

The expenditures for war purposes by the Quartermaster General's Department will be found in the Quartermaster General's Report.

	Oct. 1, 1897, to Sept. 30, 1898.
Pay of volunteers.....	\$79,613 69
Pay of rejected men.....	6,651 06
Pay for physical examinations.....	1,007 89
Salary, Major M. R. Doyon, Paymaster.....	301 98
Balance of pay, Gustave Disch, 2nd Regt.....	6 24
Gen. F. W. Byers, Surgeon General, expenses.....	212 36
Col. W. H. Patton, Asst. Adjt. General, expenses.....	161 20
Telegrams.....	102 47
Commissions.....	59 25
Printing.....	75 76
	<hr/>
Refund.....	\$88,191 90
	<hr/>
Total.....	\$67,082 26

Refund in part by the United States on pay of volunteers, July, 1898, \$21,109.64. The balance is being audited by the Auditor for the War Department.

OSHKOSH RIOTS.

The Expenditures by the Quartermaster General's Department will appear in the Quartermaster General's Report.

	Oct. 1, 1897, to Sept. 30, 1898.
Pay of troops.....	\$5,984 07

OFFICE BUSINESS.

During the year the following has been a part of the work transacted by this department:

Letters received.....	4,083
Letters written.....	4,892
General orders issued.....	22
Special orders issued.....	262
Circulars issued.....	26
Commissions issued — Wisconsin National Guard.....	148
Commissions issued — U. S. Volunteers.....	213
Resignations received.....	59
Certificates of service issued.....	59
Discharges granted.....	5,096
Enlistments recorded.....	3,541
Telegrams received.....	741
Telegrams sent.....	533

Between 5,000 and 6,000 pieces of circular matter were also mimeographed and sent out.

General Report.

VOLUNTEER SERVICE DIVISION.

In the Volunteer Service Division 625 certificates of service have been issued and 1700 letters and statements of service written. In addition to this the volunteer service clerk has copied the testimony in pension cases for about eighteen months in the two years, but the work pertaining to his division having increased by reason of the war with Spain he has been relieved from that duty.

As soon as the 1st, 2nd and 3rd Regiments were mustered into the service of the United States and the muster-in-rolls received a system was adopted for a complete record of all soldiers in the war with Spain. This record is now being made by the volunteer service clerk as rapidly as possible on printed slips of durable paper. The muster-in-rolls of the 1st regiment and 8 companies of the 2nd have already been transcribed. Every effort has been made to obtain all official papers relating to the four regiments but, for some reason that does not yet appear, this office has received no detachment muster-in-rolls of recruits, no monthly or bi-monthly returns, nor any official reports from regiments or hospitals. On the 11th of June last the following letter of inquiry was addressed to the Chief of Record and Pension Office, Washington, D. C.

“SIR:

As three Wisconsin regiments are now in the field in the service of the United States, and as this office desires complete returns relating to said regiments, I have the honor to request information on the following points: When the men soon to be recruited to fill up these regiments to the maximum are forwarded to their respective regiments, will detachment muster-in rolls, in addition to the enlistment papers, be forwarded to this office? Also, will monthly returns and bi-monthly muster-rolls be forwarded to this office by order of the War Department?

As all the above mentioned rolls were furnished this office during the war of the rebellion, I desire to know if the same course will be followed during the present war, and whether it will be necessary for the state to take any action in the matter.

Very Respectfully,
C. R. BOARDMAN,
Adjutant General.”

General Report.

To this letter the Adjutant General of the Army replied, July 7th, that "Orders had been issued to the Army to furnish the Adjutant's General of the several states with a monthly regimental return, which will show all men joined and all those who have ceased to belong to the organization during that period."

On the 27th of June the following letter was addressed to the commanding officers of the 1st, 2nd and 3rd regiments:

"SIR:

As I have no assurance that a muster and descriptive roll of recruits forwarded to your regiment will be furnished this office, you are requested to see that this is done without fail, as such muster roll is absolutely necessary in making up our records. This roll should be furnished this office as soon as possible after the recruits are mustered into the service of the United States, which, I understand, will be done on their arrival at the regiment.

The longer this matter is delayed the more difficult it will be to obtain a correct record of the men of your regiment, which record is already commenced.

(Signed) C. R. BOARDMAN,
Adjutant General."

To this request, up to this date, no response has been received from the 1st and 2nd regiments. Muster-in rolls of recruits were received from the 3rd regiment, which were not official, as will appear from the following letter addressed to the Adjutant of the 3rd regiment, July 18th:

"SIR:—

I have the honor to acknowledge the receipt of muster and descriptive rolls of recruits for the 3rd regiment, Wis. Inf. Vols.

From these rolls it does not appear when, where or by whom these recruits were mustered into the service of the United States. There is no column in the roll showing the date of muster and the rolls are not signed by any mustering officer. If the date of enlistment is the date of muster, there is nothing on the roll to indicate that fact. Please advise me in this matter, and if it is necessary to return the rolls, where and to whom shall they shall be sent.

This office is endeavoring to make a complete record of your regiment from official sources and I trust you will see that the desired information is furnished at an early date."

(Signed) C. R. BOARDMAN,
Adjutant General.

No reply has as yet been received to this letter.

General Report.

August 19th the Governor wrote the Adjutant General of the Army, stating the above facts and requesting that the proper officers, whose duty it is to furnish such muster rolls, be ordered to furnish certified copies thereof to the Adjutant General of Wisconsin; also that the surgeons in charge of hospitals having Wisconsin men under their care be ordered to report as to the condition of Wisconsin soldiers, to the same officer. Copies of letters have been received from the War Department showing that commanding officers of Wisconsin regiments have been ordered to furnish this office detachment muster-in rolls of recruits.

The official record of our volunteers in the war with Spain must be made from official sources, and the neglect thus far to furnish this office with the rolls and reports required by the regulations has caused much anxiety and annoyance. It is difficult to obtain returns and reports when they are delayed several months after they are due.

If these papers have been forwarded to the War Department and no copies retained by the officers reporting, it will be very difficult to obtain official copies.

The work of this department has been conducted in a faithful and efficient manner by Captain J. H. Whitney.

PENSION DIVISION.

During the first full biennial period after the pension division was created, namely from Sept. 30, 1892, to October 1st, 1894, there were filed 232 new claims. In the next two years, Sept. 30, 1894, to Oct. 1st, 1896, 553 new claims were filed and in the period covered by the present report, from Sept. 30, 1896, to Oct. 1st, 1898, 1,204 new claims have been entered upon the files. This increase in the business of the pension division indicates that those seeking pensions have become aware of the efficiency of this important branch of the Adjutant General's office. This

General Report.

increase has added materially to the amount of work demanded in this division.

In the last two years 554 claims have been settled, of which 311 were allowed and 243 rejected. But for the declared policy of the Bureau not to allow claims for increase, if possible to avoid doing so, most of these 125 claims for increase, would doubtless have been allowed. One hundred and twenty-five of the rejected claims were for increase. The reason assigned for this practice is want of money with which to pay claims if allowed.

In the conduct of this division during the past two years 6026 letters have been written, 800 postal cards used, 4,400 pieces of evidence copied, 1,204 new declarations transcribed and jacketed, and 860 pension vouchers executed. Advice has been given in several hundred cases not on the files of this office. The exact number can not be given because in many instances the advice and directions were given orally, of which no record was made. These instructions cover the kind of evidence to procure, how to procure it, the proper law under which certain cases should be filed, what constitutes proper evidence on particular points and many other conditions required by the constantly varying practice of the Bureau of Pensions.

It is with satisfaction that a review of the beneficent work of the pension division can be made. Its field of usefulness has been conspicuously enlarged, its volume of business being more than five fold what it was at the close of the biennial period in 1894, its methods are business-like, practical and prompt. The complicated claims, with which it has largely to deal, some of these requiring as many as twenty pieces of evidence to complete, have in many instances been satisfactorily adjusted and every reasonable effort has been made to compass the spirit and purpose of the Law which declares that the "Pension

General Report.

Division" was established "To secure speedy and just action upon all claims now pending, or which may hereafter be filed."

In a recent report by the commissioner of pensions it is shown that of all the claims adjudicated during the years 1894, 1895 and 1896, 71 per cent. were rejected and 29 per cent. allowed. While the record shows that of the claims settled by the pension division of this office during the past two years 57 per cent. have been allowed and 43 per cent. rejected. During the four years passed over 56 per cent. of all claims settled through this office have been allowed. This average of success as compared with the whole volume of allowance by the Bureau of Pensions is gratifying.

The work of this department has been handled by Colonel E. B. Gray, E. A. Hartman and Captain J. H. Whitney. It has been marked by the exercise of good judgment and a degree of care and efficiency that is praiseworthy.

RECOMMENDATIONS.

I would respectfully recommend the following:

The re-muster into the Wisconsin National Guard of such organizations from it, that volunteered for the war with Spain, and which, after being mustered out of the service of the United States, desire to return to the Guard.

The reorganization of the Wisconsin National Guard to make it conform as nearly as possible to the organization of the United States Army. The number of companies and battalions and the number and grade of all officers in each regiment should conform to the provisions for the same in the laws governing the organization of the army when war exists. In Wisconsin there have been some eight and some twelve company regiments, the state law allowing but forty companies of infantry. There has been one

General Report.

more major and one more assistant surgeons in each regiment than are allowed in the United States Army. In the state organization these extra officers should be dispensed with. Battalion adjutants should be detailed instead of permanently appointed and the grade of regimental adjutants and quartermasters and assistant surgeons should be that of first lieutenant instead of captain. It is not necessary to make the number of men to a company the number provided for by the U. S. government in time of war as that would make the total of men more than the state really needs, but the governor could be authorized, in case of the outbreak of war and the use of the Guard as volunteers, to order the captains of companies to recruit up to the U. S. maximum.

I believe also if the National Guard system is to be maintained, as I think it should be, not for state service alone but as a part of our national defense, that the state should strive to have the instruction of the organization placed more under the supervision of the U. S. Government. This, it would seem, might be done without interfering with the state's authority over the troops, in the following manner: Let the U. S. Government increase the annual appropriation which it now makes for the support of the National Guard of the various states from \$400,000 to \$1,000,000 or \$2,000,000 and apportion this amount among the several states as it now does, according to population. The sum that each state would thus be entitled to receive would be sufficiently large to make it an object, as a matter of economy if for no other reason, for each to strive to obtain its share. Then let the government establish certain conditions conformity to which will be necessary on the part of each state, before its portion of the appropriation can be available. These conditions should be that the organization, equipment and instruction of the Guard of every state

General Report.

drawing any of the appropriation should conform as far as practicable to the organization, equipment and instruction of the United States Army when war exists. For the purpose of seeing that these conditions are adhered to place the Guard of each state indirectly under the War Department, through the department commander of the department of the army in which the state is located, and let him, through his officers, inspect the Guard and report to the government whether or not the conditions have been fulfilled. It could be left to the department commander to formulate the general scheme of instruction each year for the Guard of the states in his department; following this up with a detail of officers for the purpose of instruction, to work under state authority, both at the home stations of the companies and during the annual encampments.

As another condition every officer ought to be required, as a part of the inspection, to pass such physical and mental examinations as the department commander might think necessary to demonstrate his efficiency and his ability to hold the position to which he has been commissioned. Enlisted men should also be required to pass a medical examination before they are accepted into the Guard. This plan of indirect governmental control is merely suggestive and on closer investigation there may be found some legal or other objection to it. Such an arrangement, or some other, however, that will serve the same purpose is, in my judgment, worthy of serious attention. Even with a large regular army, in the event of a long, hard contest, recourse will have to be had to volunteers. In the present war comparison between the regiments from states with a good Guard organization and those having almost none has shown the benefit that is to be derived from some previous training. Deprive the Guard from participation, as a duty, in the wars of its country and one of the most important and best reasons for its existence is taken away.

General Report.

The issue of rations, at our state encampments, on the Regular Army basis, deducting the cost thereof from the per diem allowed each man. Under the present system each company is allowed to subsist itself as the members please. By this change the men will become accustomed to the army ration and learn how to make the best use of it, while the officers will learn the proper way of issuing, drawing and using rations. Should the Guard ever take part in another war this experience will be of great value.

The revision of the blanks and all official papers used in all departments of the Guard to make them conform as nearly as possible to similar blanks and papers used in army.

The payment to each enlisted man of a specified allowance per annum for constant attendance at weekly drills at the home station.

The formation of a reserve force to bring companies up to the maximum in an emergency. This reserve to consist of the men who, after serving three years, do not re-enlist but remain in the state. Such men to be carried on the reserve list for two years and while not required to drill, a certain number be given the privilege of attending the annual encampments each year if they desire to.

The increase of the pay of the non-commissioned officers while in camp, giving the minimum increase to corporals and the maximum increase to first sergeants. At present in the state service they all draw the same pay as enlisted men.

The consolidation of the two funds (now paid each company annually and known as the "Armory" and "Clothing" funds) into one fund, the Governor to be authorized to permit company commanders to expend this for any legitimate expense.

The increase of the annual allowance to each company

General Report.

by \$100.00, captains to be permitted to expend this in any manner which they may deem for the best interests of their companies.

The issue of shoes for the entire Guard.

The issue of a complete outfit of tentage and camp equipments so that each regiment will be fully equipped for practice marches and prepared to camp anywhere and take care of itself in a proper manner.

The issue of a complete outfit of canvas uniforms to each command. They can be obtained at a small cost per suit and will result in a great saving in the wear of the more expensive uniform.

The issue of a complete field oven and cooking outfit to each company.

Provision for a military traveling library for each regiment.

The publication of a complete roster of each of the volunteer regiments from Wisconsin in the war with Spain.

Legislative enactment for the pay of the troops in camp. Under the present system the money is furnished for payment in camp at the personal risk of the state treasurer and it is doubtful if hereafter that official can be induced to furnish the large amount of money for the requisite time required, unless he is authorized to do this by law.

The reorganization of the Governor's staff by limiting the number of aides-de-camp to five and making military experience an essential for appointment as aide.

The Surgeon General in his annual report recommends "that hereafter candidates be required to pass an examining board prior to being commissioned in the Wisconsin National Guard Medical Department." I most heartily endorse his recommendation.

In concluding this report I desire to express my obligation for and my personal appreciation of the loyal and

General Report.

constant support of the assistants and clerical force of this department, and to the Quartermaster General and the members of his and other departments associated with this. I am also deeply indebted to your Private Secretary, Colonel W. J. Anderson, and to the Army Officers who have been at various times on detail with the Guard in this state. I wish to testify to the courteous manner in which I have invariably been supported by your Excellency and to thank you for the kindness you have always shown me. Your long military experience, good judgment, keen foresight and careful watchfulness have been of incalculable benefit. No one could have been more energetic, sympathetic and patriotic and no one could have been more considerate, not only for the efficiency of Wisconsin troops but also for the welfare of each officer and man. You have always shown deep interest in the Wisconsin National Guard and have been tireless in your efforts to do everything that could be legitimately done for the health and comfort of Wisconsin's Volunteers in the war with Spain.

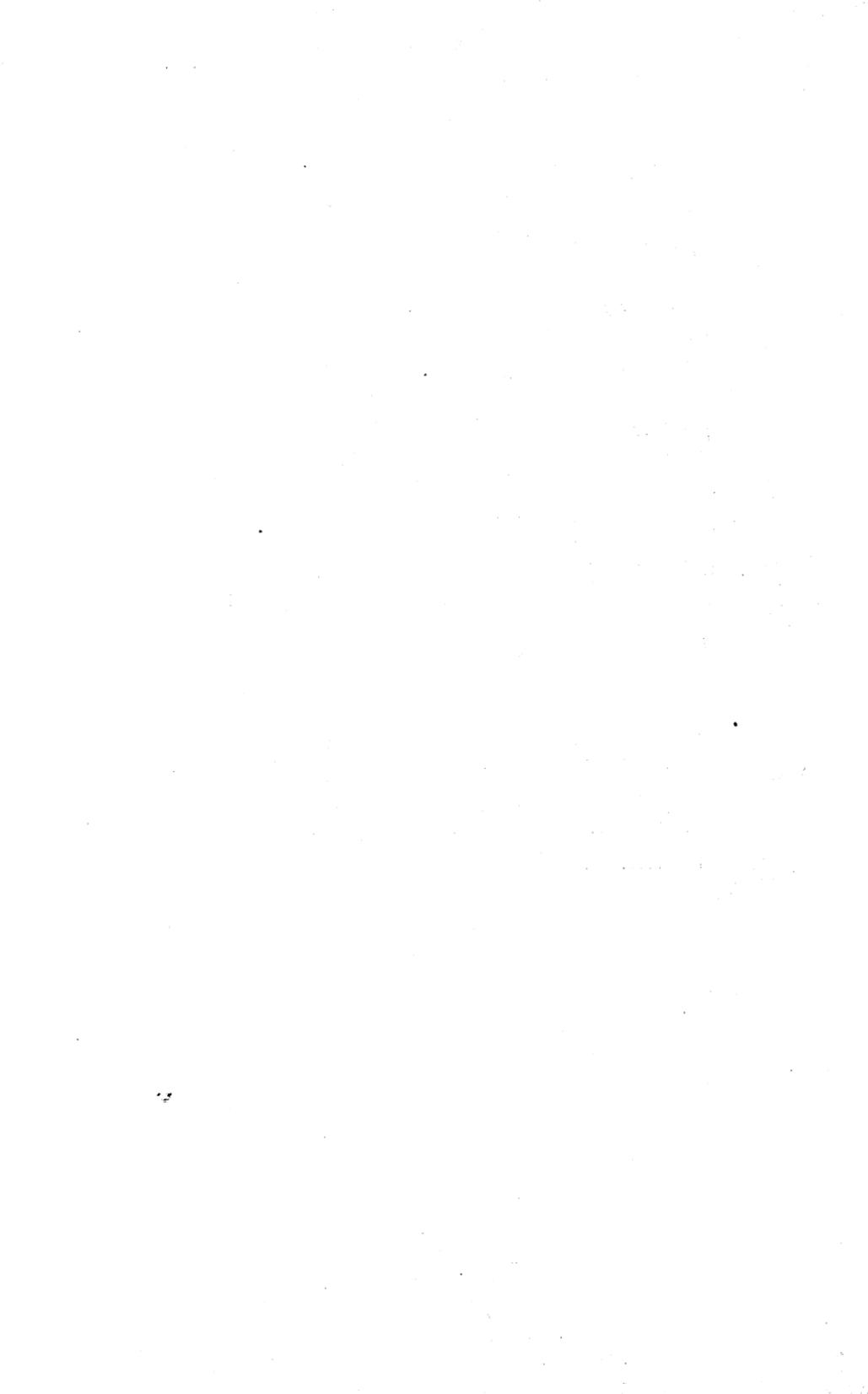
Respectfully submitted,

C. R. BOARDMAN,
Adjutant General.

UNOFFICIAL STATEMENT OF THE NUMBER OF MEN FURNISHED BY THE STATE OF WISCONSIN IN THE WAR WITH SPAIN AND DEATHS FROM ALL CAUSES TO DEC. 1, 1898.

Regiment.	Men furnished.	Killed and died of wounds received in action.	Died of disease.	Aggregate number of deaths.
1st Infantry.....	1,357	.....	47	47
2d Infantry.....	1,349	.....	41	41
3d Infantry.....	1,353	2	31	33
4th Infantry.....	1,301	.....	10	10
Battery "A".....	109	.....	.....	.....
Total.....	5,469	2	129	131

NOTE.— The above table is unofficial and incomplete, as the muster-out rolls of the regiments have not been received. Information from unofficial sources has been received at this office of the death of 17 soldiers from Wisconsin who served in the regular army, or with the volunteers from other States.



BIENNIAL REPORT

OF THE

Quartermaster General

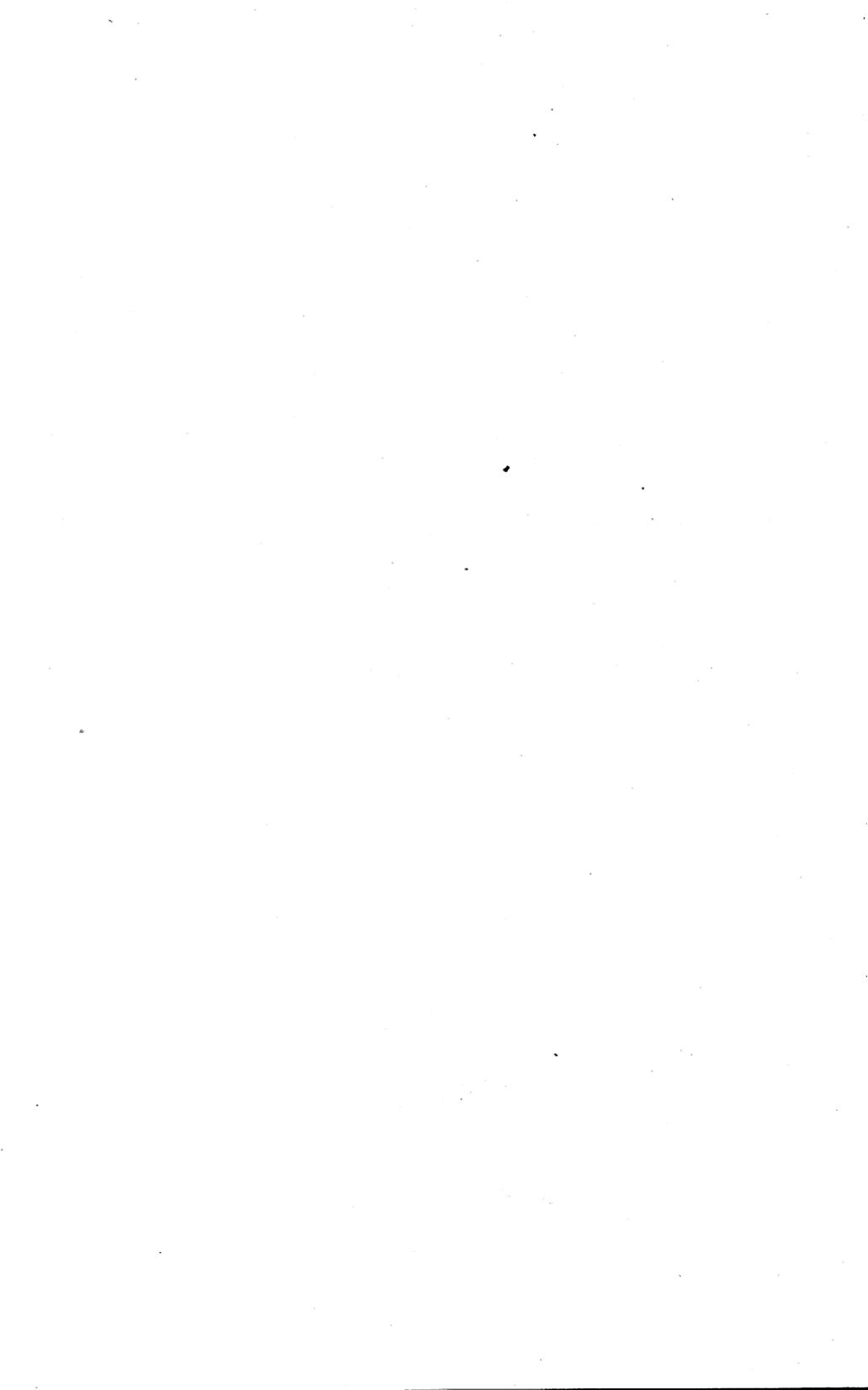
OF WISCONSIN

FOR THE

Two Fiscal Years Ending September 30, 1898.



MADISON
DEMOCRAT PRINTING COMPANY, STATE PRINTER
1899



BIENNIAL REPORT

OF THE

QUARTERMASTER GENERAL.

STATE OF WISCONSIN.

Quartermaster General's Office,

MADISON, Sept. 30th, 1898.

To His Excellency, EDWARD SCOFIELD,

Governor and Commander-in-Chief.

SIR:—In compliance with Sec. 624, Chapter 34, Wisconsin Statutes of 1898, I have the honor to submit the following report of the transactions of the department.

The Adjutant General's report fully covers the history of and occurrences in the national guard during the past two years and gives the details of the work performed by the military departments for the national guard and the organization, care and equipment of the volunteer regiments from this State for the war with Spain, so that it is unnecessary for me to expand this report beyond the actual transactions of the department, which are hereto appended.

The amounts and items of ordnance and quartermaster's stores and other property received, issued, expended, etc., and remaining on hand Sept. 30th, 1898, are marked as follows:—

Exhibit "A", showing ordnance and ordnance stores received, issued and remaining on hand September 30th, 1898.

General Report.

Exhibit "B", showing clothing and equipage received, issued, and remaining on hand September 30th, 1898.

Exhibit "C", showing ordnance, ordnance stores, clothing and equipage in possession of the Wisconsin National Guard, September 30th, 1898.

Exhibit "C" (continued), showing ordnance, ordnance stores, clothing and equipage in possession of the commanding officer of Troop "A".

Exhibit "C" (continued), showing ordnance, ordnance stores, clothing and equipage in possession of the commanding officer of the Light Battery "A".

Exhibit "D", showing ordnance and ordnance stores in possession of schools, etc., September 30th, 1898.

Exhibit "E", showing Quartermaster's supplies on hand September 30, 1898.

Very respectfully,

Your obedient servant,

OSCAR B. ZWIETUSCH,

Quartermaster General.

Expenditures, 1897.

EXPENDITURES QUARTERMASTER GENERAL'S DEPARTMENT OCT. 1ST, 1896, TO SEPT. 30TH, 1897.

GENERAL FUND.	
F. Huels, ammunition.....	\$ 79 75
John Lueders, band (Gen. Fairchild's funeral).....	40 00
Capt. B. H. Dally, extra horse hire (camp of '96).....	300 00
A. C. Johnson, mdse.....	12 45
Roy Minet, labor.....	81 38
Tom Birkness, labor.....	76 42
John Singleton, horse hire and mdse.....	173 90
Henry Anderson, labor.....	121 86
C. H. Hoten, hardware.....	340 52
Thos. Montgomery, labor.....	3 00
H. Montgomery, labor.....	3 00
Metal Sign & Eng. Co., etching.....	2 00
E. S. Burroughs, expense account.....	4 45
Capt W. J. Grant, horse hire.....	88 00
G. S. Walker, mdse.....	6 00
C. W. Jarvis, cartage.....	71 25
Wm. Good, labor.....	169 35
Capt. B. H. Dally, expenses Battery "A" (Gen. Fairchild's funeral).....	60 53
O. B. Zwietusch, mess account (encampment 1896).....	315 29
J. A. Hosch & Bro., covering rammer.....	3 00
Chas. Baumbach & Co., drugs.....	34 84
Pettlekow & Siegert, insurance.....	50 00
O. B. Zwietusch, subsistence (W. L. Buck).....	24 00
Cream City S. & D. Co., lumber.....	8 47
J. Tralmer, straw.....	15 28
Martha Morrow, washing.....	37 75
Mrs. Bogert, hay.....	12 07
Jas. Lynn, Jr, labor, rent of harrow, etc.....	19 76
J. W. Bires, straw.....	14 43
Elmer Smalley, labor.....	7 50
Carl Anderson, labor.....	110 84
Geo. Eberhardt, team work.....	46 00
Peter Olson, labor.....	11 75
Wm. Rocken, labor.....	5 00
Dennis Nash, labor.....	10 50
Frank Allds, hauling baggage.....	7 50
Dennis Hayden, labor.....	6 00
Wm. Byers, labor.....	5 00
Ed. Winner, repair of harness.....	3 25
Peter Erickson, labor.....	7 50
Ferry & Jones, painting signs.....	5 00
Ed. Bogert, hauling baggage, etc.....	47 00
Mrs. Twinton, labor.....	29 40
E. Albertson, labor.....	5 00
A. Albertson, labor.....	44 36
Ed. Haskins, labor.....	5 00
V. Harpold, labor.....	75
Chas. Kelmer, hay.....	25 20
John Johnson, labor.....	2 70
J. H. Hardy, board.....	28 00
A. Anderson, labor.....	10 50
Otto Nelson, labor.....	5 00
Frank Ender, labor.....	12 00
Paul Rocken, labor.....	5 00
Ray Bell, horse hire.....	15 00
Milton Harpold, labor.....	32 13
John Frohmader, hay.....	8 10

Expenditures, 1897.

Robt. Hanson, fence posts.....	\$3 84
H. P. Nelson, cartage.....	3 25
Chas. H. Bland, labor.....	66 50
E. B. Wells, labor.....	16 50
Jesse Thompson, labor.....	135 75
Chas. Harpold, labor.....	14 75
H. Buffmire, labor.....	26 31
Darby Flynn, teaming.....	40 90
Pat Kerwin, labor.....	14 00
E. E. Schwerrer, labor.....	45 00
Andrew More, labor.....	1 20
Ed. Nash, labor.....	6 00
Milwaukee Paste Co., paste.....	2 85
W. H. Dennison, cartage.....	13 00
A. Frisch, hay.....	13 11
King, Walker Co., target plates, castings, etc.....	57 44
J. Andrea & Sons, telephone supplies.....	30 00
Sumner & Morris, merchandise.....	11 65
A. Faulkner, labor.....	17 88
Smith & Gamm, engraving buttons.....	4 50
E. I. DuPont de N. & Co., powder.....	129 50
C. G. Rampf, cutting ice.....	14 40
H. R. Clough, photographs of reservation.....	10 00
Tuttle, Moorehouse & Taylor, military science.....	6 00
Arthur Young, housings and express.....	26 96
Anderson & Hawkins, blacksmithing.....	48 10
Geo. H. Joachim, expense account (Fort Atkinson).....	1 75
Pruesser Jewelry Co., marksman badges.....	63 00
L. E. Gleason, feed and grass seed, etc.....	110 91
Elmer Lyons, labor.....	137 83
Keely, Neckerman & K., merchandise.....	32 70
Goodyear Rubber Co., merchandise.....	36 03
W. B. Lewis, chloro naphthaline.....	34 10
Bert. Martin, labor and mowing.....	119 00
Koch & Loeber, ladders and rope.....	23 70
Stender Saddlery Co., saddle.....	11 50
Reinhardt Schroeder, labor.....	6 00
L. W. Brown, building mess kitchens and labor.....	36 00
Berger Bedding Co., cots, mattresses, etc.....	185 88
Frank Lindley, labor.....	10 93
H. Schroeder, horse hire.....	26 00
Chas. Hawkins, labor (engineer).....	132 69
Thos. Taylor, oats.....	145 90
A. C. Johnson, labor and mowing.....	22 75
Albert Rollins, labor.....	17 19
Chas. Horton, labor.....	8 75
Louis Anderson, labor.....	92 13
A. E. Montgomery, labor.....	87 88
David Olson, labor.....	18 75
Geo. Taylor, labor.....	21 00
Wm. Prior, hay.....	28 57
Lorenzo Wilson, hay.....	65 54
Wm. Bogert, straw.....	26 32
H. E. Seifert, drugs.....	6 75
John Taylor, labor.....	24 50
Otto Eberhardt, labor.....	22 75
A. F. Caldwell, expense account.....	57 91
Frohman & Haskins, mdse.....	143 29
Geo. Uberhardt, livery work.....	56 69
Hecht Zumbach, paints, oils, etc.....	32 65
W. L. Olmstead, labor.....	77 00
Reuben Hodges, labor.....	5 00
Peter Johnson, labor.....	79 40
Dwight Hodges, labor.....	30 00
Daniel Wilcox, labor.....	50 63
Reuben Hodges, labor, self and team.....	50 00
Dennis Nash, labor.....	16 25
Andrew Wilson, straw.....	28 88
N. B. Tower, hoard.....	33 74
W. N. Allds, labor, self and team.....	3 75
H. M. Seaman, sten., board of survey.....	10 00
Dwight Hodges, labor.....	25 00
Hoffman Mfg. Co., mdse.....	85 31
The Weise Hollman Co., crockery, etc.....	136 37

Expenditures, 1897.

Wm. Frankfurth Co., mdse.....	\$16 60	
O. B. Zwietusch, expense account.....	306 44	
Andrew Moe, labor.....	9 15	
Walter Tregilus, labor.....	39 25	
Ole Loftus, labor.....	14 06	
J. McNulty, labor.....	7 00	
James Seager, labor.....	6 00	
Geo. Williams, labor.....	1 88	
Thos. Lynch, labor.....	11 88	
E. E. Brague, labor.....	3 13	
W. B. Carpenter, labor.....	3 13	
Paul Rich, labor.....	3 13	
Andrew Larson, labor.....	10 25	
P. W. Slowey, labor.....	4 06	
Wm. Young, labor.....	8 13	
Geo. Nelson, labor.....	11 88	
Thos. Woodward, labor.....	1 88	
C. R. Williams, expense account.....	113 78	
Geo. Olmstead, labor.....	300 76	
H. Burroughs, labor.....	28 13	
A. C. Diemal, labor.....	186 00	
C. E. Warriner, hay.....	85 82	
O. B. Zwietusch, subsistence of officers and amount paid for help, camp of '97.....	269 58	
T. W. Evans, team and wagon for ambulance.....	3 00	
Express charges.....	249 52	
W. U. Tel. Co.....	49 99	
Democrat Ptg. Co.....	70 19	
Postage.....	131 00	
Box rent.....	8 00	
		\$7,791 39
TRANSPORTATION.		
The Chicago, Milwaukee & St. Paul Ry	\$4,396 09	
The Chicago & Northwestern Ry.....	1,988 24	
The Chicago, St. Paul, Minneapolis & Omaha Ry	2,004 95	
The Wisconsin Central lines.....	326 88	
The Illinois Central Ry.....	5 44	
The Green Bay & Western Ry.....	4 37	
		\$8,725 97
FREIGHT.		
The Chicago, Milwaukee & St. Paul Ry.....	\$657 48	
The Chicago & Northwestern Ry.....	87 65	
The Chicago, St. Paul, Minneapolis & Omaha Ry.....	344 65	
		\$1,089 78
CLOTHING.		
David Adler & Sons Clothing Co		\$413 50
SALARIES.		
O. B. Zwietusch	\$1,050 00	
A. F. Caldwell	1,385 00	
C. R. Williams	975 00	
E. S. Burroughs	720 00	
H. Scholl.....	720 00	
		\$4,850 00
WISCONSIN MILITARY RESERVATION.		
Tom Burkness, labor.....	\$15 00	
C. H. Hoten, hardware.....	79 90	
A. C. Johnson, lumber.....	59 26	
B. Hoffman Manf. Co., pipe and fittings.....	121 54	
Elmer Smalley, labor.....	45 00	
Geo. Olmstead, labor.....	65 40	
A. Albertson, labor.....	88 63	
Wm Good	58 95	
Geo. W. Lynn, labor.....	3 00	
Dennis Nash, labor.....	67 21	

Expenditures, 1897.

Henry Anderson, labor, breaking, etc.....	\$152 24	
Ed. Bogert, labor	20 00	
David Madden, mason work	28 13	
Peter Schmidt, stone window sills	55 10	
Cook & Brown Lime Co., lime.....	30 00	
Jas. Lynn, Jr., quarrying stone	66 70	
Carl Anderson, labor.....	38 25	
Albert Rollins, labor.....	76 51	
Peter Johnson, labor.....	83 11	
L. W. Brown, labor (as carpenter).....	46 00	
A. E. Montgomery, labor (as carpenter)	103 13	
L. H. Brown, labor (as carpenter)	18 50	
H. Buffire, labor	46 88	
Peter Neururer, labor (as mason).....	27 50	
G. W. Robertson, labor (as mason)	52 50	
Joseph Kearns, labor (as mason).....	22 25	
Joseph Organ, labor (as mason).....	85 93	
A. Anderson, labor.....	18 75	
Geo. Cowee, labor.....	156 00	
Willer Manf. Co., brackets, frames, sash, etc.....	466 25	
David Olson, labor.....	148 13	
Northern Hydraulic Brick Co., brick	408 95	
Reinhardt Schroeder, labor	38 30	
D. C. Buglass, labor	56 63	
E. R. Shepherd, labor.....	19 30	
John Bigelow, labor (as carpenter).....	28 30	
Arthur G. Burnie, labor (as carpenter)	17 00	
Jesse Wilkinson, labor (as carpenter)	16 30	
Chas. Reed, labor (as carpenter).....	17 30	
Otto Stockling labor (as carpenter).....	9 30	
A. D. Perry, labor (as carpenter)	13 00	
W. A. Horner, labor (as carpenter)	29 80	
W. W. Warn, labor (as carpenter)	57 25	
Otto Werner, labor (as carpenter)	9 30	
John Singleton, lime.....	40 80	
		\$3,112 58
Total expenditure Oct. 1st, 1896, to Sept. 30th, 1897.....		\$27,915 92

Expenditures, 1898.

EXPENDITURES QUARTERMASTER GENERAL'S DEPARTMENT
FROM OCT. 1ST, '97, TO SEPT. 30TH, '98.

GENERAL FUND.		
Pottlekow & Seigert, insurance	\$398	50
C. W. Jarvis, cartage	4	50
F. Spering, cartage	5	50
Henry Anderson, blacksmithing and moving building.....	100	80
The Mil. Dry Dock Co., flag staff and halliards.....	33	60
Milwaukee Paste Co., paste	12	00
N. B. Tower, bus and livery	69	75
C. K. Miner, labor.....	3	75
Hoffman & Billings, hydrants.....	22	50
Tom Ryan, labor.....	3	33
A. E. Montgomery, labor	119	38
Geo. Olmstead, labor.....	36	00
Northwestern Fuel Co., coal	90	74
Addison Faulkner, labor.....	12	88
Frank Ender, labor.....	1	25
Geo. Lee, labor.....	1	25
Lester Gitman, labor.....	4	50
Eddie Nash, labor	63	
A. H. Hollister, drugs	2	68
B. Hoffman Manf. Co., pipe fittings.....	1	42
E. R. Wells, labor.....	34	38
M. Morrow, labor.....	78	00
E. K. Bogert, labor	12	50
Alonzo Kingsland, labor.....	6	25
Milton Harpold, labor.....	1	88
A. C. Johnson, mdse	117	08
S. H. Meadows, drugs.....	68	77
B. rithaupt & Sontag, tags, etc.....	3	25
The Chas. Bambach Co., paints, etc.....	22	52
Keeley, Neckerman & Kessenich, mdse.....	13	80
John Galligier, repair of tents and flags	38	22
Carl Anderson, labor.....	34	00
L. Buffmire, livery	30	00
J. Andrea & Sons Co., repairs on telephone system	101	70
T. J. Rogers, riot drill	25	00
O. B. Zwietusch, expense account	106	73
Chas. D. Coon, medical services.....	7	50
Hecht & Zumach, paints.....	65	79
Edward Shea, log house on reservation	350	00
Geo. Eberhard, labor	15	94
Peter Johnson, labor	6	00
Peter Olson, labor	15	70
Otto Schroeder, labor	4	50
Goll & Frank Co., sheeting	35	82
E. I. DuPont Co., powder.....	148	00
Smith & Gamm, engraving	5	00
Wm. Allds, hay	15	92
Leo. Wilkinson, repairs on harness.....	16	25
C. H. Hoten, merchandise.....	37	32
C. R. Williams, expense account.....	55	70
W. R. Clough, photographs.....	7	00
L. E. Gleason, hay	7	73
J. J. Johnson, oats	12	32
Frank Nerud, repairing harness.....	1	75
J. E. Patterson, cartage	2	00
Sumner & Morris, hardware	4	13
Am. Ex. Co., express charges	288	37
U. S. Ex. Co., express charges.....	70	02
W. U. Tel. Co., service.....	19	19

Expenditures, 1898.

Postal Tel. Co., service.....	\$3 31	
Madison post office, postage.....	178 00	
Madison post office, box rent.....	8 00	
Democrat Co., printing.....	374 51	
W. C. Hoya Co., drugs.....	18 04	
The Pantorium, repair of clothing.....	623 40	\$4,015 85
TRANSPORTATION.		
The C., M. & St. P. Ry.....	\$5,049 29	
The C. & N. W. Ry.....	3,287 70	
The C., St. P., M. & O. Ry.....	2,203 87	
The Wisconsin Central Ry.....	69 96	
The Illinois Central Ry.....	6 92	
The Northern Pacific Ry.....	2 88	\$10,620 62
FREIGHT.		
The C., M. & St. P. Ry.....	\$159 45	
The C., St. P., M. & O. Ry.....	153 08	\$312 53
CLOTHING.		
David Adler & Sons' Clothing Co.....	\$7,751 51	
E. A. Armstrong Co.....	477 09	
The Henderson Ames Co.....	96 40	
The Berger Bedding Co.....	26 25	\$8,351 25
THE WISCONSIN MILITARY RESERVATION.		
C. A. Goodyear Co., lumber.....		\$955 01
SALARIES.		
O. B. Zwietusch.....	\$1,000 00	
A. F. Caldwell.....	1,400 00	
C. R. Williams.....	700 00	
Geo. A. Ludington.....	500 00	
E. S. Burroughs.....	780 00	
Henry Schall.....	780 00	\$5,160 00
OSHKOSH STRIKE.		
Pyrne & Corringall, blacksmithing.....	\$7 60	
F. McCabe & Co., hay, oats etc.....	13 18	
J. H. Webb, Rent of cots etc.....	7 60	
A. M. V. Kass, drugs.....	5 35	
J. F. Harnish, hay, oats etc.....	9 20	
Chas. Dowling, livery.....	4 00	
W. H. Englebright, board of troops.....	84 04	
James Peterson, livery and cartage.....	42 00	
Robert Webster, cartage.....	7 00	
B. H. Dally, cartage.....	3 00	
S. McElroy, care and feed of horses.....	21 50	
Thos. Lawrence, cartage.....	3 00	
Julius Winter, cartage.....	2 50	\$209 97
INSURANCE.		
O. E. Lewis, premiums on insurance.....	\$770 00	
REFUNDS.		
Transportation.....	\$2,999 11	
Insurance.....	1,830 00	
Lost property.....	236 23	\$5,065 34

Expenditures, 1898.

WAR EXPENDITURES.	
C. & N. W. Ry., transportation....	\$4,521 21
C., M. & St. P. Ry., transportation.....	2,999 47
The W. C. Ry. Co., transportation.....	738 61
The C., St. P., M. & O. Ry., transportation.....	159 86
The C., M. & St. P. Ry., freight.....	769 62
The C. & N. W. Ry., freight.....	160 59
The C., St. P., M. & O. Ry., freight.....	108 26
The American Ex. Co., charges.....	159 15
The U. S. Ex. Co., charges.....	8 40
The W. U. Tel. Co., service.....	135 11
The Wis. Telephone Co., service.....	172 55
D. S. Doyon, labor.....	125 06
Hibbard, Spencer & Bartlett, buzzacotts.....	588 00
A. J. Kluppak, labor.....	175 50
The Standard Oil Co., barrels and oil.....	88 55
Bradley Metcalf Co., shoes.....	1,442 50
Breithaupt & Sontag, printing.....	4 50
F. W. Schrenck & Co., rent on desks.....	15 00
Dyer Saddlery Co., blanket straps.....	61 25
Geo. S. Eastman, coal.....	10 20
P. H. Murphy Co., plumbing.....	78 20
Taylor & Tower, lumber.....	75 08
Edward Dorn, labor.....	17 49
W. B. Lewis, chlo. naphtho.....	34 10
J. R. Flemming, livery.....	166 60
Clement Williams Co., rent of desks.....	10 00
H. M. Seaman, buzzacotts.....	120 00
J. R. Flemming, coal.....	11 88
Phillip Gross, mdse.....	52 37
Adam Klehm, merchandise.....	24 92
Hoffmann, Billings Manf. Co., water pipe, etc.....	66 40
F. H. Terry, lumber.....	100 00
J. E. Clough, labor.....	50 00
C. Eissfeldt Co., lamps and fixtures.....	8 35
J. P. Lindeman & Sons, torches and oil heaters.....	28 50
A. LeFeber, hay, oats, etc.....	653 27
Smith Premier Co., rent of type writer.....	3 75
Julius Winter, cartage.....	11 25
Henderson, Ames Co., campaign hats.....	920 82
E. S. Burroughs, labor.....	30 00
Geo. Eberhard, labor.....	1 50
D. A. Wilcox, labor.....	1 50
Thos. Ryan, labor.....	1 50
Sid. Guiligan, labor.....	1 50
Goll & Frank, blankets.....	240 00
Landauer & Co., blankets.....	898 75
Berger Bedding Co., blankets.....	480 00
Larry Ryan, labor.....	1 50
A. Erickson, labor.....	1 50
N. B. Tower, board of help.....	14 75
Robert Philip, labor.....	4 00
J. B. Edwards, truss.....	1 00
Louis Yach, labor.....	1 50
J. W. Poiron, labor.....	1 50
J. W. Killips, labor.....	1 50
P. S. Marden, labor.....	8 00
C. W. Jarvis, cartage.....	2 25
W. H. Dennison, cartage.....	7 00
John Gallagher, tents.....	114 00
W. B. McPherson, expenses.....	9 90
J. H. Cull, labor.....	54 00
E. S. Burroughs, expenses.....	7 55
Paul Keilly, labor.....	20 00
Thos. Lawrence, cartage.....	7 00
Mil. Tran-it Co., cartage.....	1 00
Goll and Frank, shirts.....	360 25
W. H. Wiley & Son, leggins.....	336 01
Harry Burroughs, labor.....	7 00
J. Pritzlaff Hdw Co., knives, forks and spoons.....	120 35
Amil Erickson, labor.....	7 50
Joys Bros. & Co., tents and express.....	2,652 80

Expenditures, 1898.

T. J. Fleming, hay, oats, labor, etc.....	\$105 00	
B. Mock & Son, livery.....	102 75	
Lloyd Betsworth, labor.....	15 00	
Truax, Greene & Co., medical chests, etc.....	525 00	
S. H. Meadows, drugs.....	665 85	
James Slowey, labor.....	46 50	
E. A. Armstrong Co., flags.....	420 00	
Otto Pietsch, repairing clothing.....	60 00	
W. B. Edson, labor.....	33 00	
Elgin Creamery Co., butter.....	236 80	
Harry Burroughs, labor.....	27 50	
James Lynn, Jr., labor.....	1 00	
Dwight Hodges, labor.....	35 00	
Ed. Haskins, labor.....	9 00	
Thos. Ryan, labor.....	10 50	
Peter Lahm, cartage.....	9 00	
H. E. Schroeder, horse hire.....	28 00	
Peter Grover, horse hire.....	14 00	
Wm Allds, straw.....	14 86	
T. J. Sullivan, cartage.....	1 00	
Bert Martin, labor.....	35 00	
Lloyd Betsworth, labor.....	60 00	
Elgin Creamery Co., butter.....	1,187 01	
August Schroeder, milk.....	5 80	
F. J. Matichette, board of employes.....	33 33	
Geo. Eberhard, labor and board of employes.....	39 00	
Geo. Taylor, straw.....	7 72	
Frank Morrow, labor.....	9 38	
C. Waggenson, labor.....	28 00	
Chris. Nelson, straw.....	8 36	
A. Faulkner, labor.....	35 00	
C. E. Warriner, straw.....	12 58	
H. C. Gerling, cartage.....	1 00	
Elmer Lyons, labor.....	13 50	
Sparta Iron Works, sundries.....	1 40	
Andrew Larson, labor.....	4 00	
Ernst Leake, milk, straw, etc.....	317 07	
James Lynn, Jr., rent of boiler.....	25 50	
Owen Tierney, milk.....	140 36	
Wm. Allds, milk.....	294 56	
Henry Rule, milk.....	276 12	
Lloyd Betsworth, labor.....	64 00	
Hoffman Billings Manf. Co., pumps, pipes, etc.....	247 30	
O. B. Zwietusch, officers' mess.....	141 55	
Amil Erickson, labor.....	12 75	
O. B. Zwietusch, expenses.....	174 75	
Lloyd Betsworth, labor.....	19 13	
Amil Erickson, labor.....	38 00	
Chas. Smith, labor.....	9 00	
E. S. Burroughs, expenses.....	9 00	
John Gallagher, repairing tents.....	65 50	
C. H. Hoten, hardware, etc.....	81 28	
Lloyd Betsworth, labor.....	6 00	
N. B. Tower, board of employes.....	61 65	
Adam Klehm, hardware.....	14 18	
James Slowey, labor.....	7 50	
Lloyd Betsworth, labor.....	30 00	
Andrew Wilson, hay and straw.....	27 65	
Dennis Nash, labor.....	6 00	
W. B. Edson, rent of engine.....	44 00	
S. A. Peterson, expenses.....	12 00	
S. H. Meadows, drugs.....	163 28	
King & Walker Co., plumbing, etc.....	14 74	
Geo. Rule, oats.....	27 67	
C. W. Jarvis, cartage.....	1 50	
Wm. Merrickler, meals furnished officers.....	112 00	
W. B. McPherson, labor.....	310 00	
		\$26,882 80
Total expenditures, Oct 1st, '97, to Sept. 30th, '98.....		\$57,277 83

Quartermaster's Stores.

EXHIBITS SHOWING THE CONDITION OF THE
QUARTERMASTER'S STORES.

Ordnance and Ordnance Stores.

EXHIBIT "A."

Showing ordnance and ordnance stores received, issued and remaining on hand, September 30, 1898.

	3.2 in. B. L. rifle.	3 in. rifle, M. L.	12 lb. brass cannon.	Carriage and limber, 3.2 in. rifle.	Carriage and limber, 3 in. rifle.	Carriage and limber, 12 lb. cannon.	Caisson and limber, 3.2 in. rifle.
On hand last report			5			5	
Received from U. S., 1897	1			1			1
Received from U. S., 1898							
Received from Wis. National Guard, 1897		1			1		
Received from Wis. National Guard, 1898		1					
Received from G. A. R. Posts, 1897							
Received from G. A. R. Posts, 1898							
Received from schools							
Received by purchase							
Received reloaded cartridges							
Total to be accounted for	1	2	5	1	2	5	1
Issued to U. S.							
Issued to Wis. National Guard, 1897	1						1
Issued to Wis. National Guard, 1898							
Issued to Wis. Volunteers							
Issued to schools							
Expended camp, 1897							
Expended, repair small arms							
Expended, reloading cartridges							
Total accounted for	1						1
Remaining on hand to be accounted for		2	5	1	2	5	2

Ordinance and Ordnance Stores.

EXHIBIT "A."—Continued.

	Linch pins.	Poles, 3.2 in. rifle.	Poles, 3 in. rifle.	Priming wires.
On hand at last report	6		2	
Received from U. S., 1897		1		1
Received from U. S., 1898			2	
Received from Wis. National Guard, 1897			1	
Received from Wis. National Guard, 1898				
Received from G. A. R. Posts, 1897				
Received from G. A. R. Posts, 1898				
Received from schools				
Received by purchase				
Received reloaded cartridges				
Total to be accounted for.....	6	1	5	1
Issued to U. S.,				
Issued to Wis. National Guard, 1897		1		1
Issued to Wis. National Guard, 1898				
Issued to Wis. Volunteers				
Issued to schools				
Expended camp, 1897				
Expended, repair small arms				
Expended, reloading cartridges				
Total accounted for.....		1		1
Remaining on hand to be accounted for.....	6		5	

Ordnance and Ordnance Stores.

EXHIBIT "A."— Continued.

	Blank cartridges, 3.2 in. rifle. D. C.	Shells, 3.2 in. rifle.	Base percussion fuze.	Magazine rifles.
On hand at last report	500	75	75	1
Received from U. S., 1897				
Received from M. S., 1898				
Received from Wis. National Guard, 1897				
Received from Wis. National Guard, 1898				
Received from G. A. R. Posts, 1897				
Received from G. A. R. Posts, 1898				
Received from schools				
Received by purchase				
Received reloaded cartridges				
Total to be recounted for	500	75	75	1
Issued to U. S.	500	75	75	
Issued to Wis. National Guard, 1897				
Issued to Wis. National Guard, 1898				
Issued to Wis. Volunteers				
Issued to schools				
Expended camp, 1897				
Expended, repair small arms				
Expended, reloading cartridges				
Total accounted for	500	75	75	
Remaining on hand to be accounted for				1

Ordnance and Ordnance Stores.

EXHIBIT "A."—Continued.

Springfield rifles, calibre, 45.	Springfield rifles, calibre, 50.	Springfield cadet, rifles, calibre, 45.	Springfield carbines, calibre, 45.	M. L. muskets.	Colts' revolver, calibre, 38.	Colts revolvers, calibre, 45.	Sabers, artillery.	Sabers, cavalry.	Swords, officers.	Swords, N. C. O.
134	9		1	35	9	1	2	16	4	
1,600					100					
1,456					84	1				
2,449						1			2	17
	360			598				5		
	154			142						
95	73	41						12		
5,724	596	41	1	775	201	3	2	33	6	17
136	596			775						
1,486					107					
743					1					
2,763					88					
20										
5,148	566			775	196	1				
586		41	1		5	2	2	33	6	17

Ordnance and Ordnance Stores.

EXHIBIT "A"—Continued.

	Arms chests.	Bayonets, cal. 45.	Bayonets, cal. 50.	Bayonets, cadet.	Bayonets, cal. 50.	Headless shell extractors.	Pistol grips.
On hand last report.....	4	150	46	.....	35	361	1
Received from U. S., 1897.....	82	1,600	.....	.....	.....	.....	.....
Received from U. S., 1898.....	.....	.....	.....	.....	.....	.....	.....
Received from Wis. National Guard, 1897.....	.....	1,454	.....	.....	.....	.....	.....
Received from Wis. National Guard, 1898.....	.....	2,470	.....	.....	.....	45	.....
Received from G. A. R. Posts, 1897.....	.....	.....	360	.....	599	.....	.....
Received from G. A. R. Posts, 1898.....	.....	.....	115	.....	147	.....	.....
Received from schools.....	13	97	67	41	.....	.....	.....
Received by purchase.....	.....	.....	.....	.....	.....	.....	.....
Received reloaded cartridges.....	.....	.....	.....	.....	.....	.....	.....
Total to be accounted for.....	99	5,771	588	41	781	406	1
Issued to U. S.....	76	.....	588	.....	.....	.....	.....
Issued to Wis. National Guard, 1897.....	.....	1,478	.....	.....	.....	.....	.....
Issued to Wis. National Guard, 1898.....	.....	741	.....	.....	.....	2	.....
Issued to Wis. Volunteers.....	.....	2,763	.....	.....	.....	.....	.....
Issued to schools.....	1	20	.....	.....	.....	.....	.....
Expended camp, 1887.....	.....	.....	.....	.....	.....	.....	.....
Expended, repair small arms.....	.....	.....	.....	.....	.....	.....	.....
Expended, reloading cartridges.....	.....	.....	.....	.....	.....	.....	.....
Total accounted for.....	77	5,002	588	.....	.....	2	.....
Remaining on hand to be accounted for....	22	769	.....	41	781	404	1

Ordnance and Ordnance Stores.

EXHIBIT "A"—Continued.

	Hair girths.	Housings, general officers.	Housings, staff.	Martingales.	Saddles.	Saddle blankets.	Saddle cloths, officers.
On hand last report	5	4	10	14	37	...	18
Received from U. S., 1897	42	.....	.....	.....	.....	.....	.....
Received from U. S., 1898 .....	.....	.....	.....	.....	.....	.....	.....
Received from Wis. National Guard, 1897	5	.....	.....	.....	6	1	4
Received from Wis. National Guard, 1898	27	.....	.....	.....	40	1	.30
Received from G. A. R. Posts, 1897 .....	.....	.....	.....	.....	.....	.....	.....
Received from G. A. R. Posts, 1898 .....	.....	.....	.....	.....	.....	.....	.....
Received from schools .....	.....	.....	.....	.....	.....	.....	.....
Received by purchase .....	.....	.....	.....	.....	.....	.....	.....
Received reloaded cartridges .....	.....	.....	.....	.....	.....	.....	.....
Total to be accounted for	79	4	10	14	83	2	61
Issued to U. S. ....	.....	.....	.....	.....	.....	.....	.....
Issued to Wis. National Guard, 1897	30	.....	.....	.....	12	.....	8
Issued to Wis. National Guard, 1897 .....	.....	.....	.....	.....	6	.....	4
Issued to Wis. Volunteers .....	.....	.....	.....	.....	44	.....	45
Issued to schools .....	.....	.....	.....	.....	.....	.....	.....
Expended camp, 1897 .....	.....	.....	.....	.....	.....	.....	.....
Expended, repair small arms .....	.....	.....	.....	.....	.....	.....	.....
Expended, reloading cartridges .....	.....	.....	.....	.....	.....	.....	.....
Total accounted for	30	.....	.....	.....	62	.....	57
Remaining on hand to be accounted for	49	4	10	14	21	2	4

Ordnance and Ordnance Stores.

EXHIBIT "A"—Continued.

Saddle pads, felt.	Stirrups, wood, pairs.	Stirrups, strap, pairs.	Blanket bags.	Blanket bag shoulder straps, pairs.	Blanket bag coat straps, pairs.	Bayonet scabbards, cal. 45.	Bayonet scabbards, cal. 50.	Bayonet scabbards, cadet.	Bayonet scabbards, cal. 56.	Cartridge belts, woven.
7	56	56	44	44	44½	74	42		30	72
			50	50	100	200				
						800				
			2,508	2,507	2,494	18				
						2,452				1
							394		417	
							119		130	
20					210	99	48	60		
27	56	56	2,602	2,591	2,848	3,643	543	60	577	942
2	32	32	3	4	17	88				
1			61	60	65	15	120			9
			2,527	2,527	2,732	2,763				
						20				
3	32	32	2,591	2,591	2,814	2,886	120			9
24	24	24	11		34	757	423	60	577	933

Ordinance and Ordnance Stores.

EXHIBIT "A" — Continued.

	Cap pouches.	Cartridge belts, woven, with buckle.	Cartridge belts, leather.	Cartridge belt plates.	Cartridge boxes, McKeever.	Cartridge boxes, large.
On hand last report.....		102	24	111	200	86
Received from U. S., 1897		50				
Received from U. S., 1898				800		
Received from Wis. National Guard, 1897.....		81		69	3	
Received from Wis. National Guard, 1898.....		2,566			737	
Received from G. A. R. Posts, 1897	466		164			662
Received from G. A. R. Posts, 1898	69	70	93			116
Received from schools.....		50	30			
Received by purchase.....						
Received reloaded cartridges.....						
Total to be accounted for.....	535	2,919	311	980	940	764
Issued to U. S.						
Issued to Wis. National Guard, 1897.....		134				
Issued to Wis. National Guard, 1898.....		20		9	60	
Issued to Wis. Volunteers		2,736			17	
Issued to schools.....						
Expended camp, 1897.....						
Expended, repair small arms.....						
Expended, reloading cartridges						
Total accounted for.....		2,890		9	77	
Remaining on hand to be accounted for	535	29	311	971	863	764

Ordnance and Ordnance Stores.

EXHIBIT "A" — Continued.

Canteens.	Canteens, uncovered.	Canteen covers, pairs.	Canteen straps.	Gun slings.	Gun slings, Wisconsin pattern.	Haversacks.	Haversack straps.	Meat cans.	Waist belts.	Waist belt plates.	Sword belts, officers'.	Sword belts, N. C. O.
68	101	77	57	178	16	37	32	24	160	194	2	.....
50	50	300	.....	50	50	100	.....	.....	.....	.....
800	800	800	.....	.....	.....	.....	.....	.....	.....	.....
79	99	.....	1	.....	.....	22	22	.....	.....
2,492	2,492	2,510	.....	2,502	2,494	2,485	670	670	2	23
.....	638	639	.....	.....
.....	84	.....	.....	.....	.....	126	126	.....	.....
.....	300	66	67	.....	.....
.....
3,489	101	77	3,399	3,971	16	2,590	2,576	2,909	1,682	1,718	4	23
.....
30	9	180	.....	9	5	3	2	3	.....	.....
60	62	82	.....	65	56	60	186	186	.....	.....
2,454	2,453	2,646	.....	2,515	2,515	2,846	255	255	.....	.....
.....	20	.....	.....	.....	.....	.....	.....	.....	.....
.....
.....
2,544	2,524	2,928	.....	2,589	2,576	2,909	443	444	.....	.....
.....
945	101	77	875	1,043	16	1	.....	.....	1,139	1,274	4	23

Ordnance and Ordnance Stores.

EXHIBIT "A" — Continued.

	Tin cups.	Tin plates.	Knives.	Forks.	Spoons.
On hand last report.....	200				
Received from U. S., 1897.....					
Received from U. S., 1898.....					
Received from Wis. National Guard, 1897.....					
Received from Wis. National Guard, 1898.....	2,365		366	366	366
Received from G. A. R. Posts, 1897.....					
Received from G. A. R. Posts, 1898.....					
Received from schools.....					
Received by purchase.....	1,392	1,152	1,152	1,152	1,152
Received reloaded cartridges.....					
Total to be accounted for.....	3,957	1,152	1,518	1,518	1,518
Issued to U. S.....					
Issued to Wis. National Guard, 1897.....	2				
Issued to Wis. National Guard, 1898.....	70				
Issued to Volunteers.....	2,749		366	366	366
Issued to schools.....					
Expended camp, 1897.....					
Expended, repair small arms.....					
Expended, reloading cartridges.....					
Total accounted for.....	2,821		366	366	366
Remaining on hand to be accounted for.....	1,136	1,152	1,152	1,152	1,152

Ordinance and Ordinance Stores.

EXHIBIT "A" — Continued.

Pistol holsters, cal. 38.	Pistol holsters, cal. 45.	Saber belts and plates	Rifle ball cartridges, cal. 30.	Rifle ball cartridges, cal. 45.	Rifle ball cartridges, cal. 50.	Carbine ball cartridges, cal. 45.	Revolver ball cartridges, cal. 38.	Revolver ball cartridges, cal. 45.	Rifle blank cartridges, cal. 45.	Revolver blank cartridges, cal. 38.	Revolver blank cartridges, cal. 45.	Small arms powder, pounds.
9	14	.....	256	23,500	1,670	3,360	.....	1,080	6,900	1,000	3,072	.....
100	.....	10	1,000	300,000	.....	.....	30,000	.....	20,000	.....	.....	.....
8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
84	.....	.....	.....	113,464	.....	.....	.....	.....	.....	.....	.....	.....
.....
.....	.....	.....	.....	51,500	.....	.....	.....	.....	.....	.....	.....	1,500
.....
201	14	10	1,256	488,464	1,670	3,360	30,000	1,080	26,900	1,000	3,072	1,500
.....
107	1	10	.....	130,000	.....	.....	7,760	.....	1,500	.....	.....	.....
1	.....	.....	.....	34,000	.....	.....	1,340	.....	2,200	.....	.....	.....
88	.....	.....	.....	157,080	.....	.....	6,000	.....	.....	.....	.....	.....
.....
.....	.....	.....	326	127,000	.....	.....	9,020	.....	10,654	340	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	800
196	1	10	326	448,080	.....	.....	24,120	.....	14,354	340	.....	800
.....
5	13	.....	930	40,384	1,670	3,360	5,880	1,080	12,546	660	3,072	700

Ordnance and Ordnance Stores.

EXHIBIT "A"—Continued.

	Cartridge primers.	Friction primers.	Carbine bullets.	Rifle bullets.	Round bullets.
On hand last report	40,500	100		300	41,000
Received from U. S., 1897	500,000	5,000	60,000	250,000	120,000
Received from U. S., 1898					
Received from Wis. National Guard, 1897					
Received from Wis. National Guard, 1898	8,000				29,000
Received from G. A. R. Posts, 1897					
Received from G. A. R. Posts, 1898					
Received from schools					
Received by purchase					
Received reloaded cartridges					
Total to be accounted for	548,500	5,100	60,000	250,300	190,000
Issued to U. S.					
Issued to Wis. National Guard, 1897	114,000	1,100		49,000	61,000
Issued to Wis. National Guard, 1898	53,500	1,510		4,000	48,000
Issued to Wis. Volunteers		990			
Issued to schools					
Expended camp, 1897		100			
Expended, repairs small arms					
Expended, reloading cartridges	79,000		27,000	51,550	
Total accounted for	246,500	3,600	27,000	104,550	109,000
Remaining on hand to be accounted for	302,000	1,500	33,000	145,750	81,000

Ordnance and Ordnance Stores.

EXHIBIT "A"—Continued.

	Pasters, buff.	Reloading tools, bench set.	Reloading tools, hand set.	Resizing bench.	Resizing dies, upper rifle.
On hand last report.....	460,000	1	2		24
Received from U. S., 1897.....		3		1	24
Received from U. S., 1898.....					
Received from Wis. National Guard, 1897.....			2		
Received from Wis. National Guard, 1898.....		1	40		
Received from G. A. R. Posts, 1897.....					
Received from G. A. R. Posts, 1898.....					
Received from schools.....					
Received by purchase.....					
Received reloaded cartridges.....					
Total to be accounted for.....	460,000	5	44	1	48
Issued to U. S.....					
Issued to Wis. National Guard, 1897.....	118,000				
Issued to Wis. National Guard, 1898.....	8,000				
Issued to Wis. Volunteers.....					
Issued to schools.....					
Expended camp, 1897.....	87,000				
Expended, repair small arms.....					
Expended, reloading cartridges.....					
Total accounted for.....	213,000				
Remaining on hand to be accounted for.....	247,000	5	44	1	48

Ordnance and Ordnance Stores.

EXHIBIT "A"—Continued.

Resizing dies, lower. rifle	Bands, lower.	Bands, upper.	Band springs.	Bayonet clasp screws.	Breech blocks.	Breech block caps.	Breech block cap screws.	Breech screws.	Bridles.	Bridle screws.	Cam latches com- plete.
2	69 25	13 25	196	19	167	66	102	6	22 25	151	2 50
2	94	38	196	19	167	66	102	6	47	151	52
2	10 2										15
										6	
2	12									6	15
2	93	26	196	19	167	66	102	6	47	145	37

Ordnance and Ordnance Stores.

EXHIBIT "A"—Continued.

	Cam latch springs.	Ejector springs.	Ejector spring spindles.	Ejector studs.	Extractors.
On hand last report	125	133	157	20	40
Received from U. S., 1897.....	300	300	300	.....	300
Received from U. S., 1898.....	.....	.....	.....	.....	.....
Received from Wis. National Guard, 1897.....	.....	.....	.....	.....	.....
Received from Wis. National Guard, 1898.....	.....	.....	.....	.....	.....
Received from G. A. R. Posts, 1897.....	.....	.....	.....	.....	.....
Received from G. A. R. Posts, 1898.....	.....	.....	.....	.....	.....
Received from schools.....	.....	.....	.....	.....	.....
Received by purchase.....	.....	.....	.....	.....	.....
Received reloaded cartridges.....	.....	.....	.....	.....	.....
Total to be accounted for.....	425	433	457	20	340
Issued to U. S.....	46	109	107	.....	176
Issued to Wis. National Guard, 1897.....	10	24	24	.....	72
Issued to Wis. National Guard, 1898.....	.....	.....	.....	.....	.....
Issued to Wis. Volunteers.....	.....	.....	.....	.....	.....
Issued to schools.....	.....	.....	.....	.....	.....
Expended camp, 1897.....	.....	.....	.....	.....	.....
Expended, repair small arms.....	39	.....	.....	.....	.....
Expended, reloading cartridges.....	.....	.....	.....	.....	.....
Total accounted for.....	95	133	133	.....	248
Remaining on hand to be accounted for.....	330	300	324	20	92

Ordnance and Ordnance Stores.

EXHIBT "A"—Continued.

	Lock plates.	Main springs.	Main spring swivels.	Main spring swivel rivets.	Ramrods.	Rear sights complete.	Rear sight base screws.
On hand last report.....	2	24	142	143	35	2	38
Received from U. S., 1897.....	25					75	
Received from U. S., 1898.....							
Received from Wis. National Guard, 1897.....							
Received from Wis. National Guard, 1898.....							
Received from G. A. R. Posts, 1897.....							
Received from G. A. R. Posts, 1898.....							
Received from schools.....							
Received by purchase.....							
Received reloaded cartridges.....							
Total to be accounted for.....	27	24	142	143	35	77	38
Issued to U. S.....	2						
Issued to Wis. National Guard, 1897.....		3			35	45	
Issued to Wis. National Guard, 1898.....						1	
Issued to Wis. Volunteers.....							
Issued to schools.....							
Expended camp, 1897.....			12	28		9	38
Expended, repair small arms.....							
Expended, reloading cartridges.....							
Total accounted for.....	2	3	12	28	35	55	38
Remaining on hand to be accounted for.....	25	21	130	115		22	

Clothing and Equipage.

EXHIBIT "B."

Showing Clothing and Equipage received, issued and remaining on hand Sept. 30th, 1898.

	Blankets, woolen.	Blankets.	Blouses.	Officers forage caps.	Forage caps.
On hand last report	58	29	393	.....	588
Received from U. S., 1897	50	.....	.....	.....	.....
Received from U. S., 1898	22	.....	200	4	148
Received from Wisconsin National Guard, 1897..	2,551	.....	4,654	3	3,880
Received from Wisconsin National Guard, 1898..	50	1,042	677	.....	60
Received by purchase .....	.....	.....	.....	.....	.....
Total to be accounted for	2,712	1,071	5,924	7	4,676
Issued to Wisconsin National Guard, 1897.....	16	.....	67	.....	54
Issued to Wisconsin National Guard, 1898.....	63	.....	668	.....	515
Issued to Wisconsin Volunteers.....	2,497	444	2,923	.....	.....
Issued to schools .....	.....	.....	52	.....	.....
Condemned and destroyed.....	.....	.....	400	.....	463
Condemned and sold .....	.....	10	2	.....	.....
Sold to officers .....	.....	.....	.....	.....	.....
Total accounted for.....	2,576	454	4,112	.....	1,032
Remaining on hand to be accounted for.....	136	617	1,812	7	3,644

Clothing and Equipage.

EXHIBIT "B"—Continued.

Cap ornaments.	Cap ornaments, Mus.	Chevrons, ordinance Sergeant, pairs.	Chevrons, Com. Sergeant, pairs.	Chevrons, Hospital Steward, pairs.	Chevrons, Sergeant major, pairs.	Chevrons, R. G. M. Sergeant, pairs.	Chevrons, 1st Sergeant, pairs.	Chevrons, Co. Q. M. Sergeant, pairs.	Chevrons, Sergeant, pairs.	Chevrons, Corporal, pairs.	Chevrons, signal caps, pairs.	Coats, uniform, five.
357	21	.....	.....	.....	11	1	4	3	22	17	.....	1
47	.....	2	1	1	.....	.....	5	.....	1	1	.....	.....
.....	.....	.....	.....	.....	.....	.....	3	3	571	350	55	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	4	6	4	.....
404	21	2	1	1	11	1	12	6	598	374	59	1
.....	21	.....	.....	.....	4	1	2	2	16	18	4	.....
76	.....	.....	.....	.....	5	.....	.....	.....	236	216	49	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	13	9	.....	.....
.....
76	21	.....	.....	.....	9	1	2	2	265	243	53	.....
.....
328	.....	2	1	1	2	.....	10	4	333	131	8	1

Clothing and Equipage.

EXHIBIT "B"—Continued.

	Coats, uniform, mounted.	Hats, campaign.	Helmets, cork.	Helmets, Felt.	Leggins, pairs.
On hand last report		378	380		127
Received from U. S., 1897.....	1	300			225
Received from U. S., 1898.....		400			300
Received from Wis. National Guard, 1897.....		290		85	125
Received from Wis. National Guard, 1898.....		2,682	647		2,537
Received by purchase		850			600
Total to be accounted for	1	4,900	1,027	85	3,914
Issued to Wis. National Guard, 1897.....		419			245
Issued to Wis. National Guard, 1898.....		191			113
Issued to Wis. Volunteers.....		2,927			2,766
Issued to schools.....					
Condemned and destroyed					
Condemned and sold.....			378		
Sold to officers		121			127
Total accounted for.....		3,658	378		3,251
Remaining on hand to be accounted for ...	1	1,242	649	85	763

Clothing and Equipage.

EXHIBIT "B"—Continued.

Leggin strings, pairs.	Ponchos, rubber.	Flannel shirts.	Overcoats.	Overalls, mounted.	Shoulder straps, captain, pairs.	Shoulder straps, 1st lieutenant, pairs.	Shoulder straps, 2nd lieutenant, pairs.	Stable frocks.	Trousers, pairs.	Trousers stripes, hosp. steward, prs.	Trouser stripes, sergt., pairs.	Trouser stripes, corporal pairs.	Shoes.
.....	8	1	29	24	.....	.....	.....	24	462	.....	49	24	.....
.....	.....	7	1	.....	.....	.....	.....	.....	242	.....	8	3	.....
1,300	.....	2,525	2,549	.....	2	2	3	.....	4,436	1	497	299	.....
.....	.....	600	60	.....	.....	.....	.....	.....	1,432	.....	28	14	1,198
1,300	8	3,133	2,639	.....	2	2	3	.....	6,562	1	582	340	1,198
.....	.....	72	7	24	.....	.....	.....	24	193	.....	15	6	.....
548	.....	130	64	.....	.....	.....	.....	.....	698	.....	20	15	.....
.....	1	2,884	2,518	.....	.....	.....	.....	.....	2,923	.....	235	214	1,189
.....
.....	.....	2	6	.....	.....	.....	.....	.....	605	.....	19	12	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9
548	1	3,088	2,595	24	.....	.....	.....	24	4,419	.....	289	247	1,198
652	7	45	44	.....	2	2	3	.....	2,143	1	293	93	.....

Clothing and Equipage.

EXHIBIT "B"—Continued.

	Trouser stripes, mus., pairs.	Axes and helves.	Bed ticks.	Bed sheets.	Bed spreads.
On hand last report.....	4	5	98	136	5
Received from U. S., 1897.....					
Received from U. S., 1898.....	4				
Received from Wis. National Guard, 1897.....	170		1,181		
Received from Wis. National Guard, 1898.....	6	24			
Received by purchase.....					
Total to be accounted for.....	184	29	1,279	136	5
Issued to Wis. National Guard, 1897.....	3				
Issued to Wis. National Guard, 1898.....	2		1		
Issued to Wis. Volunteers.....	143		576		
Issued to schools.....					
Condemned and destroyed.....			10		
Condemned and sold.....	4				
Sold to officers.....					
Total accounted for.....	153		587		
Remaining on hand to be accounted for...	31	29	692	136	5

Clothing and Equipage.

EXHIBIT "B"--Continued.

Brooms.	Bunk card holder.	Comforters.	Cots, canvas.	Cots, iron.	Cots, wood.	Flag halyards, garrison.	Flag halyards, storm.	Flag slings.	Flags, national.	Flags, state.	Flags, garrison.	Flags, field hospital.
.....	300	18	.....	70	43	.....	.....	2	1	1	1	1
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....
10	.....	.....	11	.....	52	1	1	.....	4	4	.....	.....
10	300	18	11	70	95	1	1	2	5	5	2	1
.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	4	4	.....	.....
.....	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	14	.....	.....	.....	.....	.....	.....	.....	4	4	.....	.....
10	286	18	11	70	95	1	1	2	1	1	2	1

Clothing and Equipage.

EXHIBIT "B" — Continued.

	Flags, post.	Flags, storm.	Mattresses.	Pick axes and shovels.	Pillows.
On hand last report.....	1	2	118		59
Received from U. S., 1897.....					
Received from U. S., 1898.....	3				
Received from Wis. National Guard, 1897.....					
Received from Wis. National Guard, 1898.....					
Received by purchase.....			52	6	20
Total to be accounted for.....	4	2	170	6	79
Issued to Wisconsin National Guard, 1897.....					
Issued to Wisconsin National Guard, 1898.....					
Issued to Wisconsin Volunteers.....					
Issued to schools.....					
Condemned and destroyed.....			22		12
Condemned and sold.....					
Sold to officers.....					
Total accounted for.....			22		12
Remaining on hand to be accounted for.....	4	2	148	9	67

Clothing and Equipage.

EXHIBIT " B " — Continued.

Pillow cases.	Shovels, long handled.	Shovel, short handled.	Stoves, tent.	Stove pipe, joints.	Tents, common.	Tents, hospital.	Tents, wall.	Tents, headquarter.	Tents, mess.	Tent flies, hospital.	Tent flies, wall.	Tent flies, head-quarters.
128	.....	8	8	48	3	24 2	254 30	3	12	28 2	277 30	3
.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	9	20	.....	.....	.....	.....	226	.....	.....	.....	.....	.....
128	9	28	10	48	3	29	510	3	12	30	307	3
.....
.....	.....	.....	.....	.....	.....	9	440	.....	.....	9	208	.....
.....
.....	.....	.....	.....	.....	.....	9	440	.....	.....	9	208	.....
128	9	28	10	48	3	17	70	3	12	21	99	3

Clothing and Equipage.

EXHIBIT " B " — Continued.

	Tent poles, hospital ridge.	Tent poles, hospital upright.	Tent poles, wall. ridge.	Tent poles, wall. upright.
On hand last report.	28	56	284	568
Received from U. S., 1897	2	4	40	80
Received from U. S., 1898				
Received from Wis. National Guard, 1897				
Received from Wis. National Guard, 1898			226	452
Received by purchase.				
To be accounted for.	30	60	550	1,100
Issued to Wisconsin National Guard, 1897				
Issued to Wisconsin National Guard, 1898				
Issued to Wisconsin Volunteers	9	18	440	880
Issue to schools				
Condemned and destroyed	3	6	41	82
Condemned and sold				
Sold to officers				
Total accounted for	12	24	481	962
Remaining on hand to be accounted for.	18	36	99	138

Clothing and Equipage.

EXHIBIT "B" — Continued.

Tent poles, head-quarter, sets.	Tent poles, mess, sets.	Tent pins, large.	Tent pins, small.	Trumpets.	Trumpet crooks.	Trumpet cords.	Field oven.	Towels.	Tent floors, 9x9.	Tent floors, 7x14.	Tent floors, head-quarters.
3	12	3,834	9,284	13	11	6	4	86	220	21	2
.....	1,336	1,596	12	12	13	.....	.....	.....	.....	.....
.....	9	9	9	.....	.....	.....	.....	.....
.....	6	1	.....	1	.....	.....	.....	.....
.....	73	.....	67	10	.....	.....	.....	.....
.....	23	.....	.....	.....	.....
3	12	5,170	10,880	113	33	94	43	86	220	21	1
.....	13	13	11	.....	.....	.....	.....	.....
.....	1	2	2	.....	.....	.....	.....	.....
.....	3,776	2,218	73	6	73	36	.....	.....	.....	.....
1	6,455	.....	.....	.....	.....	.....	37	.....	1
.....
1	3,776	8,673	87	21	86	36	.....	37	.....	1
.....
2	12	1,394	2,207	26	12	8	7	86	183	21	1

Ordnance, Ordnance Stores, Clothing and Equipage.

EXHIBIT "C."

Showing Ordnance, Ordnance Store, Clothing ana Equipage in possession of the Wisconsin National Guard, September 30th, 1898.

	Springfield rifles, Cal. 45.	Colts revolvers, Cal. 38	Bayonets, Cal. 45.	Bridles, curb.	Saddles.	Saddle clothes.	Pistol Holsters.	Bayonet scabbards cal. 50.
General Staff		7		3	3		7	
Officers W. N. G		5		2	2	1	5	
Co. A. 5th Infantry	60		60					60
Co. B 5th Infantry	60		60					60
Co. C 5th Infantry	60		60					60
Co. D 5th Infantry	60		60					60
Co. E 5th Infantry	60		60					60
Co. F 5th Infantry	60		50					60
Co. G 5th Infantry	60		60					60
Co. H 5th Infantry	60		60					60
Co. I 5th Infantry	60		60					60
Co. K 5th Infantry	60		60					60
Co. L 5th Infantry	60		60					60
Co. M 5th Infantry	60		60					60
Total	720	12	720	5	5	1	12	180

Ordnance, Ordnance Stores, Clothing and Equipage.

EXHIBIT "C."—Continued.

Showing Ordnance, Ordnance Stores, Clothing and Equipage in possession of the Commanding Officer, Troop "A."

64 S. B. L. carbines, cal. 45.	4 Pistol holsters, cal. 38.
41 Colt's revolvers, cal. 45.	2,000 Carbine ball cartridges, cal. 45.
4 Colt's revolvers, cal. 38.	1 Iron target plate.
54 Curb bridles.	1 Set reloading tools.
31 Curry combs.	60 Woolen blankets.
50 Halters.	159 Blouses.
50 Horse covers, canvas.	76 Campaign hats.
60 Nose bags.	50 Cap ornaments.
3 Picket pins.	6 Pairs chevrons, sergeant.
63 Saddles.	4 Pairs chevrons, corporal.
50 Saddle bags — pairs.	100 Forage caps.
74 Saddle blankets.	61 Flannel shirts.
55 Carbine boots and straps.	74 Pairs leggins.
57 Carbine slings.	53 Overcoats.
47 Carbine sling swivels.	160 Pairs trousers.
42 Cartridge belts — woven.	6 Pairs trouser stripes, sergeant.
50 Cartridge boxes.	4 Pairs trouser stripes, corporal.
50 Canteens.	30 Bed ticks.
50 Canteen straps.	1 Field oven.
42 Pistol holsters, cal. 45.	4 Arm chests.

Ordnance, Ordnance Stores, Clothing and Equipage.

EXHIBIT "C"—Continued.

Showing Ordnance, Ordnance Stores, Clothing and Equipage in possession of Commanding Officer Light Battery "A."

3	3-2 in. B. L. rifles.	46	Halters.
3	Carriages and limbers, 3-2 in. rifle.	22	Nose bags.
3	Cassions and limbers, 3-2 in. rifle.	17	Leg guards,
3	Breech sights, 3-2 in. rifle.	14	Saddles.
3	Breech sight pouches.	30	Saddle blankets.
9	Buckets, watering.	4	Saddle cloths, officers'.
8	Cartridge pouches.	26	Saddle cloths, scarlet.
3	Front sights, for 2-2 in. rifle	32	Saddle cloths, hair.
3	Front sight covers.	16	Surcingles.
3	Gun covers.	32	Pairs stirrups, brass.
3	Gunners' gimlets.	32	Pairs stirrup straps.
3	Handspikes, maneuvering.	25	Pistol holsters, cal. 45.
3	Handspikes, trail.	5	Pistol holsters, cal. 38.
16	S. S. Harness, wheel.	74	Saber belts and plates.
16	S. S. Harness, lead.	25	Cartridge boxes.
8	Lanyards.	500	Friction primers.
5	Hair girths.	100	Blank cartridges, 3-2 in. rifle.
4	Paulins.	60	Woolen blankets.
10	Pole props.	107	Blouses.
8	Primer pouches.	83	Campaign hats.
4	Priming wires.	62	Cap ornaments.
2	Prolongs.	10	Pairs chevrons, sergeants'.
3	Screw drivers.	12	Pairs chevrons, corporals'.
3	Sperm oilers.	60	Flannel shirts.
3	Sponges and rammers, bore.	87	Pairs legg ns.
6	Sponges and rammers, chamber.	60	Overcoats.
3	Sponge cover, bore.	154	Pairs trousers.
6	Sponge covers, chamber.	10	Pairs trouser straps.
3	Steel pouches, small.	14	Pairs trouser stripes, corporal.
3	Tool boxes, 3-2 in. rifle.	2	Pairs trouser stripes, men's.
3	Vent punches.	3	Trumpets and cords.
15	Whips.	24	Stable frocks.
3	Wrenches.	24	Pairs overalls, mounted,
2	Schrapnel, 3 1/2 in.	7	Equipment chests.
23	Colts' revolvers, cal. 45.	4	Axes, handlee.
5	Colt's revolvers, cal. 38.	4	Pick axes, handled.
21	Sabers.	4	Shovels, long handled.
13	Bridles, curb.	4	Spades, short handled.

Ordnance and Ordnance Stores Held by Schools.

EXHIBIT "D."

*Showing Ordnance and Ordnance stores in possession of schools,
Sept. 30th, 1898.*

	Cannon, 12 lbs., brass.	Howitzer, brass.	Carriage and limber, 12 lbs. gun.	Carriage and limber, 12 lbs. gun.	Springfield rifles, cal. 45.	Springfield rifles, cal. 50.	Springfield carbines, cal. 45.
St John Military Academy	2	.....	2	2	.....	.....	.....
University Sacred Heart, Watertown .....	.....	.....	.....	.....	.....	50	.....
Northwestern College, Watertown .....	.....	.....	.....	.....	.....	60	.....
St. Bernard's College, Watertown .....	.....	.....	.....	.....	.....	.....	29
Columbia High School .....	.....	.....	.....	.....	15	.....	.....
School for Deaf and Dumb, Delavan .....	.....	.....	.....	.....	.....	20	.....
Milton College .....	.....	.....	.....	.....	.....	20	.....
Sons of Veterans, Menasha .....	.....	.....	.....	.....	.....	.....	.....
Soldiers' Home, Waupaca	1	1	2	.....	.....	.....	.....
Rahr Guards, Manitowish .....	.....	.....	.....	.....	40	.....	.....
Total	3	1	4	2	55	150	29

Ordnance and Ordnance Stores Held by Schools.

EXHIBIT "D" — Continued.

M. L. muskets,	Bayonets, cal. 45.	Bayonets, cal. 50.	Bayonets, cal. 58.	Bayonet scabbards, cal. 45.	Bayonet scabbards, cal. 50.	Bayonet scabbards, cal. 58.	Cartridge boxes, large.	Gun slings.	Waist belts.	Waist belt plates.	Arm chests.
.....	.....	50	.....	.....	50	.....	50	.....	50	50	.....
.....	.....	60	.....	.....	60	.....	60	.....	60	60	.....
.....	15	.....	.....	15	.....	.....	29	.....	29	29	.....
.....	.....	20	.....	.....	20	.....	15	15	15	15	1
40	.....	.....	40	.....	.....	40	40	.....	20	20	1
.....	.....	20	.....	.....	20	.....	20	.....	40	40	.....
.....	40	.....	.....	40	.....	.....	.....	40	40	40	2
40	55	150	40	55	150	40	214	55	274	274	4

Quartermaster Supplies on Hand, 1898.

EXHIBIT "E."

Showing Quartermasters Supplies on hand September 30th, 1898.

FURNITURE AND FIXTURES.

1 Book rack.	8 Lamps, brackets, hanging.
2 Chairs, office.	17 Lamp reflectors, wall.
18 Chairs, cane seat.	10 Lamp shades, tin.
3 Chairs, rocker.	24 Looking glasses.
3 Chairs, camp.	6 Match safes.
221 Chairs, wood.	12 Candle holders, Tin.
8 Cuspidors.	4 Slop buckets, earthen.
8 Commodes.	12 Slop buckets, Tin.
11 Chambers.	29 Soap dishes.
4 Desks, roller top.	2 Settes wood.
11 Desks, table.	3 Stoves.
3 Desks, cabinet.	1 Stove, bil.
8 Door screens.	16 Stove pipe joints.
3 Dust pans.	4 Stove pipe elbows.
1 File case, glass front.	2 Stools, desk.
1 Iron safe.	1 Type writer.
1 Letter press.	1 Type writer desk.
1 Letter press stand.	34 Wash bowls, earthen.
34 Lamps, bracket.	38 Wash basins, tin.
11 Lamps, glass, stands.	39 Water pitchers.
3 Lamps, glass, hang.	3 Waste baskets, willow.
17 Lamps, Rochester, hanging.	2 Waste baskets, wire.
4 Lamps, corner reflector.	74 Window screens.
25 Lamps, brackets, wall.	59 Window shades.

MEANS OF TRANSPORTATION.

4 Horses.	1 Rack, platform.
1 Pair bobs., heavy.	1 Pair sleighs, double.
2 S. S. harness, heavy.	1 Wagon, wide tire.
3 S. S. harness, light.	1 Wagon, double.
3 Halters.	1 Wagon, single.
3 Fly nets.	1 Wagon, delivery.
1 Pole, buggy.	1 Whip.
1 Rack, wagon.	

CARPENTERS TOOLS.

1 Brace.	2 Oilers.
1 Set bits.	1 Plane, fore.
12 Chisels.	1 Saw set.
1 Hammer, riveting.	3 Saws, hand.
7 Hammers, claw.	3 Screw driver.
5 Hatchets.	1 Try square.
6 File handles.	1 Tack hammer

PLUMBERS TOOLS.

Set dies, 7.	1 Pipe vise.
Pipe cutter.	3 Monkey wrenches.
Pair pipe tongs.	2 Wrenches, socket.
Pair chain tongs.	1 Wrench, iron.

Quartermaster Supplies on Hand, 1898.

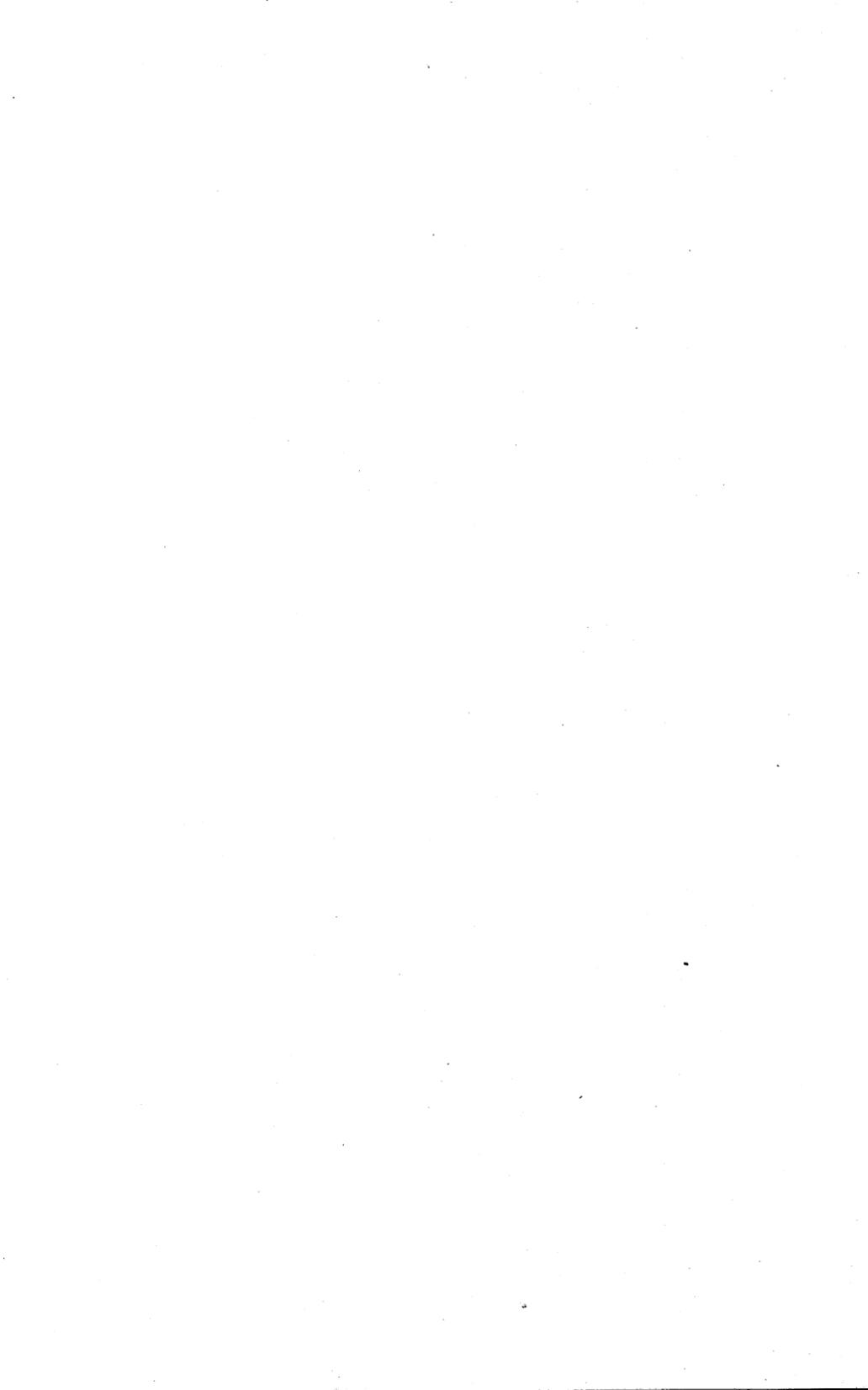
MISCELLANEOUS TOOLS.

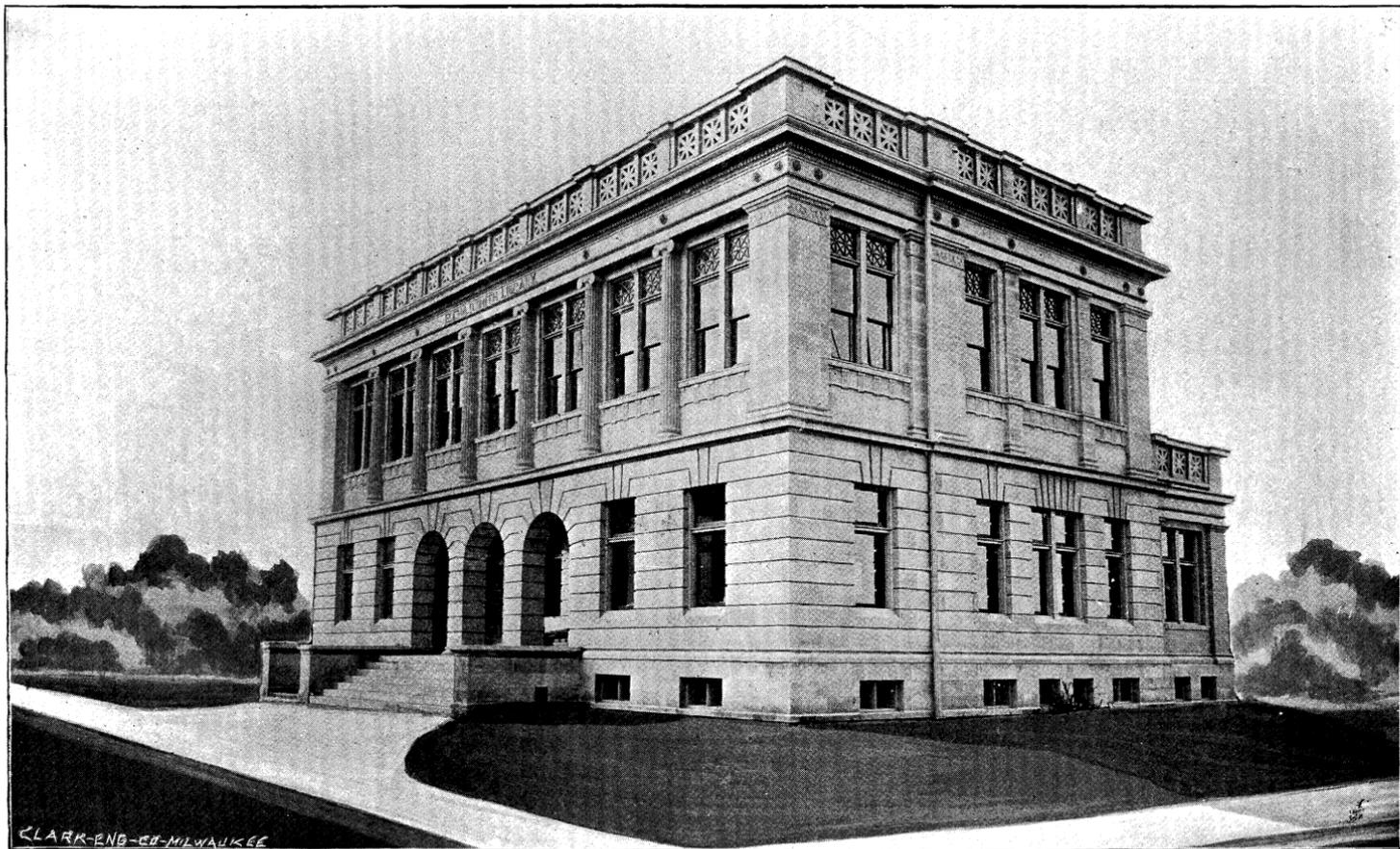
1 Bench vise.	1 Pair pliers.
1 Box scraper.	7 Pitch forks.
1 Bung auger.	1 Plow stubble.
5 Chisels, cold.	1 Posthole chisel.
1 Grub hoe.	1 Posthole shovel.
3 hoes.	11 Punchers, steel.
1 Hay knife.	1 Rakes.
1 Mallet, iron.	5 Scythes.
3 Mallets, wood.	1 Saw, crosscut.
3 Mauls, iron.	1 Scraper, road.
1 Mattock.	5 Snaths.
1 Nail puller.	1 Tapeline.
1 Pair pinchers.	

POST PROPERTY.

2 Axes, fire.	2 Scales, platform.
4 Branding irons.	1 Set scales, counter.
4 Baskets, bushel.	1 Seed sower.
3 Baskets, clothes.	20 Sprays, bath.
4 Carts, hand.	2 Sprinkling cans.
7 Clothing chests.	1 Steam gauge.
1 Coffee mill.	2 Steel punches, "W."
1 Easel.	3 Sets stencils and numbers
1 Faucet, brass.	10 Stencil plates.
3 Faucets, iron.	5 Stencil brushes.
4 Funnels, tin.	2 Stencil cups.
22 Gasoline burners.	48 Street lamps.
500 ft. Hose, cotton, 1½ in.	26 Stools, wood.
450 ft. Hose garden, ¾ in.	74 Tables, small.
100 ft. Hose, rubber, 1½ in.	39 Tables, mess.
1 Hose cart.	4 Tables, round.
4 Hose nozzles, 1½ in.	11 Telephones.
12 Hose nozzles, ¾ in.	1 Telephone switch board.
2 Hose reels, garden.	4 Tool chests.
3 Ice boxes.	9 Torches.
2 Ladders, extension.	4 Tripods.
24 Lanterns.	2 Urinals, iron.
5 Lawn sprays.	2 Water coolers.
3 Measures, tin.	92 Water barrels.
3 Oil cans.	57 Wash stands, wood.
13 Padlocks.	7 Wire screens.
25 Pails, tin.	3 Wheelbarrows.
1 Pump, fire.	3 Work benches.
4 Pumps, hand.	1 Truck.







THE ELISHA D. SMITH FREE PUBLIC LIBRARY BUILDING RECENTLY ERECTED IN MENASHA. See Page 21.

SECOND BIENNIAL REPORT

OF THE

FREE LIBRARY COMMISSION

OF WISCONSIN

1897-98

Published by Authority of Law

MADISON
DEMOCRAT PRINTING COMPANY, STATE PRINTER
1898

WISCONSIN FREE LIBRARY COMMISSION

OFFICE: MADISON, WIS.

EX-OFFICIO:

CHARLES KENDALL ADAMS,
President of the University of Wisconsin,
MADISON, WIS.

JOHN Q. EMERY,
State Superintendent,
MADISON, WIS.

REUBEN GOLD THWAITES,
Secretary State Historical Society,
MADISON, WIS.

APPOINTED BY THE GOVERNOR:

J. H. STOUT,
MENOMONIE, WIS.

MRS. CHAS. S. MORRIS,
BERLIN, WIS.

OFFICERS:

J. H. STOUT, Chairman,
MENOMONIE, WIS.

F. A. HUTCHINS, Secretary,
MADISON, WIS.

MISS L. E. STEARNS, Librarian,
MILWAUKEE, WIS.

LETTER OF TRANSMITTAL.

Madison, September 31, 1898.

TO HON. EDWARD SCOFIELD,
Governor.

SIR—I have the honor to transmit herewith the Second Biennial Report (1897-1898) of the Wisconsin Free Library Commission, in accordance with the provisions of section 373*a*, of the Wisconsin Statutes of 1898.

Very respectfully,
JAS. H. STOUT,
Chairman.

CONTENTS.

	Page.
Two Years' Progress, by the Secretary.....	1
Library legislation—New libraries—New buildings—Improvements —Gifts and bequests—Traveling libraries—Periodicals for travel- ing libraries—Old magazines—Contributions of books and pe- riodicals—Village traveling libraries—Reading matter for the soldiers.	
The Child and the Small Library, by the Librarian, L. E. Stearns	12
The Elisha D. Smith Public Library, Menasha.....	21
Joseph Dessert Public Library.....	23
Wisconsin Summer School of Library Science.....	24
Wisconsin State Library Association.....	27
Inter-State Library Conference at Evanston, Ill.....	30
District Conferences.....	33
Institutes for Librarians.....	34
Proceedings of the Commission.....	36
Reorganization of the Commission April 24, 1897—Special Meet- ing, April 27, 1897—Annual Meeting, June, 1897—Annual Meet- ing, June 9, 1898.	
Expenditures of the Commission.....	38

APPENDIX.

Statistics of Wisconsin Libraries—1898.

Free Libraries Supported by Municipal Taxation.....	42
Free Libraries Supported from School Funds.....	45
Free Libraries Supported by Individuals.....	45
Free Association Libraries.....	46
Subscription Libraries.....	48
Proprietary Library.....	50
College and Academy Libraries.....	50
Libraries Supported by the State.....	51
Stout Traveling Libraries.....	52
Traveling Pictures.....	53
J. D. Witter Traveling Libraries.....	53
Systems of Traveling Libraries in Wisconsin.....	54

Illustrations.

Elisha D. Smith Library Building.....	Frontispiece
Traveling Library Stations in Wisconsin.....	facing 4
Children's reading rooms.....	facing 12
Children in libraries.....	facing 18
Joseph Dessert Library Building.....	23

TWO YEARS' PROGRESS.

PREPARED BY THE SECRETARY.

The First Biennial Report of the Wisconsin Free Library Commission was prepared in August, 1896, eight months after the Commission was organized. Since that time the work of the Commission has steadily grown, though its most rapid progress has been made since May, 1897, when the legislature increased its annual appropriation from \$500 to \$4,000. At that time the Commission was reorganized. Miss L. E. Stearns and F. A. Hutchins resigned their positions as members and were succeeded by Hon. J. H. Stout, of Menomonie, and Mrs. Chas. S. Morris, of Berlin. After these changes had taken place J. H. Stout was chosen Chairman of the Commission, F. A. Hutchins Secretary, and Miss L. E. Stearns Librarian, and the two officers last mentioned were employed to devote all their time to the work of the Commission. A permanent office was also fitted up in the capitol. Besides increasing the annual appropriation for the Commission the legislature of 1897 made a number of changes in the laws relating to libraries.

LIBRARY LEGISLATION.

The general law relating to the establishment of free public libraries by cities and villages was amended by striking out the words which limited the annual tax to support such libraries to "one mill on the dollar of taxable property" and by omitting the clause which made it necessary to secure an affirmative vote of the people before a library could be maintained by taxation. Under the law, as amended, any common council, village board, or town board of a town of more than 1,000 inhabitants, may establish and equip a public library from its general fund, and may levy an annual tax to support it, but moneys levied for the support of a library after it is established must be kept in a separate fund, and all moneys voted for library purposes must be expended by a library board.

By another amendment to the law the local superintendents of schools in cities and the supervising principals of schools in villages

are made ex-officio members of the library boards in the communities in which they are employed.

A third amendment allows library boards to make contracts by which the books of their libraries and their reading-rooms may be made as free to non-residents as to residents. It also gives town, village and county boards the authority to make contracts with library boards to secure the full privileges of the libraries and reading-rooms for their constituents.

NEW LIBRARIES.

During the past two years new free public libraries, supported by municipal taxation, have been established in Appleton, Baraboo, Cumberland, Durand, Hartland, Hillsboro, Kilbourn, Neillsville, North Milwaukee, Racine, Rhinelander, Richland Center, Sheboygan, Spring Green, Stevens Point, Thorp, Viroqua and Wausau. W. H. Bradley has established one which he supports at Tomahawk, while Jos. Dessert is building another at Mosinee. Free reading-rooms have been founded by subscriptions in Sun Prairie, Port Washington, Spring Valley and a number of other small towns.

NEW BUILDINGS.

There has been an unexampled progress in the housing of Wisconsin libraries during the period under review. The Milwaukee Library has moved into the new building which it occupies conjointly with the Milwaukee Museum. This splendid building cost \$512,000 and is a credit to the state as well as to the city which built it. The great building at Madison which the state is preparing for the use of the libraries of the Historical Society and of the University will be ready for use in 1899. It will cost in the neighborhood of \$600,000. The library at Menasha is now being removed to the beautiful new building which has recently been erected for it by E. D. Smith. The cost of the building and lot to Mr. Smith was \$20,000. Jos. Dessert has made the plans and let the contract for a library building, for Mosinee, which will cost, with the lots, about \$5,000. At Oshkosh, also, arrangements have been made for a substantial new home for the library. At New London a large and pleasant room in the new city hall building was arranged especially for their free library, which is supported by an association.

IMPROVEMENTS.

The libraries at Marinette and Wauwatosa and the city library at Menomonie have been classified and cataloged by expert librarians.

Trained librarians have been put in charge of a number of our libraries, while the boards of ten others have sent their librarians to get professional training for their work. Nearly all of our libraries and reading-rooms have improved the quality of their work and some of them have made noticeable improvements. Nearly all the new libraries are doing excellent work—better, it must be confessed, on the whole, than the older ones.

GIFTS AND BEQUESTS.

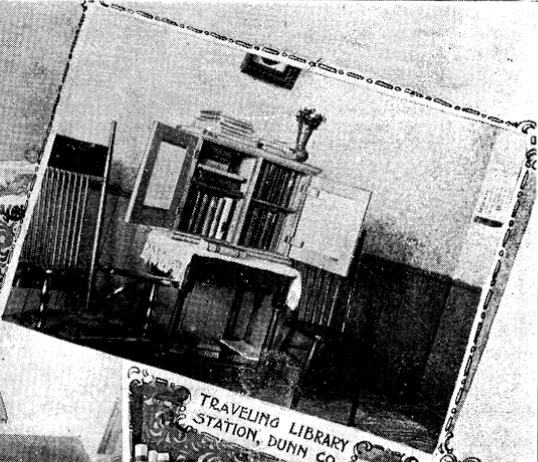
The gifts and bequests to free libraries in Wisconsin in the past two years are a striking evidence of the growth of the belief in the value of this means of popular education. E. D. Smith has not only given the public library at Menasha a fine library building and a site at a cost of \$20,000, but has given it \$10,000 for endowment. The late J. J. Williams, who had given the library in Beaver Dam a building which cost \$25,000, left it a bequest of \$5,000 for endowment. The library at Kenosha has received about \$5,000 from citizens. Geo. Gale gave \$1,000 of this amount and Edward Bain \$2,000. J. W. Lybrand has given the new library at Richland Center \$1,000, Hon. J. G. Lamberson gave \$100 and other citizens enough to make the total gifts to that library \$1,200. In 1895 Mrs. Harris left a bequest to the Oshkosh Public Library to be paid in 1898 if the city and the citizens would raise an equal amount. The conditions were met and the library has received from the Harris estate \$80,000, from Hon. Philetus Sawyer \$25,000, from the city \$50,000 and books and furniture valued at \$5,000. The late James Aram, of Delavan, left a bequest of \$20,000, payable after the death of his wife, who survives, to found a public library in his home town. When the library at Racine was founded the citizens presented the board with \$5,400 for the purchase of books. Of this amount Wm. Horlick gave \$1,000, the M. B. Erskine estate \$1,000, Chas. H. Lee \$500, Robert H. Baker \$300, Mrs. H. M. Wallis \$250, the O. R. Johnson estate \$250, E. L. Baker \$150, Chas. H. Baker, Jr., \$150, the Woman's Club \$150, Andrew Simonson \$150, J. Mills & Co. \$100, Kearney & Thompson \$100, Cooper, Simmons & Co. \$100. The Milwaukee library has received \$10,000 from Mrs. Caroline Metcalf for the purchase of books upon the fine arts, Mr. August F. Uihlein has given \$5,000 to the book fund and a bequest of \$1,000 has come to the same institution from the estate of the late Mr. Guido Hansen. Mr. Jos. Dessert is erecting a building for a free library which he will equip and maintain for the benefit of the citizens of the village of Mosinee and vicinity. The building and lots will cost about \$5,000. W. H. Bradley has purchased the books for a free library at Tomahawk and maintains the library at his own expense. The Appleton

library has received from the Y. M. C. A. of that city lots in the business center valued at \$8,000, with an incumbrance of \$4,000. Under the conditions of the gift the city has agreed to build a library building on the lots. By public subscription \$600 has been raised for the library at Durand, \$1,200 for the one at Stevens Point and \$1,500 for that at Sheboygan. Many other libraries report gifts ranging in amount from \$100 to \$500. The subscription library at Whitewater reports the receipt of \$300, a bequest from Lewis Cook. The State Historical Society has received a bequest of \$1,000 for its binding fund from the estate of the late Stephen Taylor, of Philadelphia, a former Wisconsin pioneer. Other large gifts have been promised to public libraries in various parts of the state provided certain conditions are met. When to the amounts mentioned above are added the generous gifts made during the same period to traveling libraries, the annual income of our fifty-five libraries from taxation and endowments, the \$512,000 expended by the city of Milwaukee for the library and museum building, the \$420,000 already supplied by the state for the library building for the use of the state historical society building and of the state university, and the \$80,000 expended for school libraries under the township library law, the total shows that the people of Wisconsin believe that it is worth while to give the masses good books to read, as well as to teach them how to read.

TRAVELING LIBRARIES.

In May, 1896, Hon. J. H. Stout sent out sixteen traveling libraries to visit the hamlets and farming communities of Dunn County. They were so cordially received and their volumes were so eagerly read that within a year he increased the number to thirty-seven. In August, 1896, J. D. Witter, of Grand Rapids, bought fifteen libraries to travel in Wood County and within a few months increased the number to thirty-two. The public library at Chippewa Falls soon secured four libraries for the small hamlets of Chippewa County, W. H. Bradley, of Tomahawk, bought four for the families that live near the scattered saw mills in the northern part of Lincoln County. In December, 1896, an association was formed at Ashland to send traveling libraries to the hamlets in Ashland, Bayfield, Washburn, Price, Sawyer, Douglas, Taylor and Iron counties. This association has now twenty-five libraries. During the past few months many of the women's clubs have become greatly interested in this new form of philanthropic work and small systems of traveling libraries have been established at Berlin, Green Bay, Marinette, Wausau, Beloit, La Crosse and Stevens Point. A few weeks ago E. D. Smith, of Menasha, asked the Commission to buy and arrange fifteen traveling libraries of fifty

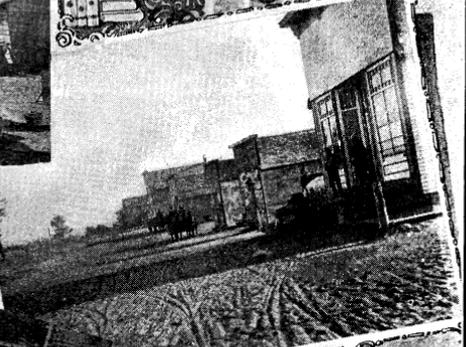
202



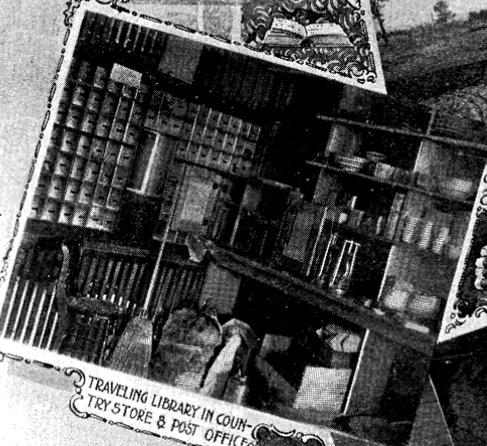
TRAVELING LIBRARY STATION, DUNN CO.



TRAVELING LIBRARY STATION, DUNN CO.

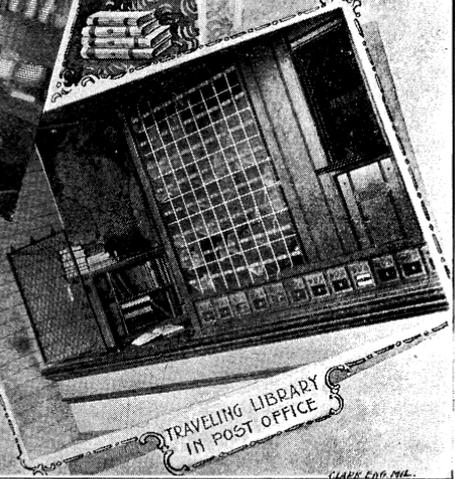


TRAVELING LIBRARY STATION, WHEELER, WIS.



TRAVELING LIBRARY IN COUNTRY STORE & POST OFFICE

203



TRAVELING LIBRARY IN POST OFFICE



volumes each for him. They will be sent out from the public library at Menasha to farming communities and hamlets in northern Winnebago and Calumet counties.

Recently Joseph Dessert, of Mosinee, sent the Commission a check for \$500 with a request that it be used to purchase traveling libraries to circulate in the state under the charge of the Commission. Twelve excellent libraries of fifty volumes each, and the necessary packing cases, have been bought with this money. The Jos. Dessert libraries will be sent to the farming communities in different parts of the state to show the advantages of this system of popular education. The Commission has also been given one library each by the Milwaukee Downer College, Gardner P. Stickney, the M. W. K. Club, the Social Economics Club, the Merrill Club of the West Side High School, the Seventh and Eighth grade classes of the Normal School, the Misses Elizabeth and Louise Haisler and Miss L. E. Stearns, all of Milwaukee, and the Madison Book Club.

PERIODICALS FOR TRAVELING LIBRARIES.

When Senator Stout's traveling libraries were first sent out to the farmers of Dunn County his neighbors in Menomonie gave large numbers of old and current periodicals to be loaned with the books and one school gave files of the *Youth's Companion* which extended over a period of twelve years. The latter were stitched together in small volumes. The librarians were instructed to loan these periodicals freely and to ask borrowers to return them but not to charge them and, after the periodicals had gone about the neighborhood, to give them away. The *Youth's Companions* were loaned first to the schools, where the teachers read them at the "opening exercises" and children read them at the recesses and during the "noon hour." From the school they went to the families in the district. Mr. Witter tried the same plan of work in Wood County and it was soon found that the periodicals sent with the traveling libraries were doing nearly as much good as the books. The overworked farmer's wife whose daily cares and worries left her no time to read till the children were put in bed at night found the short sketches of travel in *McClure* or *Harper's Monthly*, the bright stories of *Scribners* and the *Century*, or the accounts of women's work in the *Ladies' Home Journal*, attractive and inspiring when the reading of a large book seemed too much like work. It is said on good authority that no other class of people furnish so large a proportion of their number to the insane asylums as farmers' wives. Our experience shows that the glimpses of the great outside world which the magazines and illustrated papers give these women are among the best means to relieve the incessant strain of

the small cares and worries that at last bring hopelessness if not worse. The children's periodicals were found to be an unceasing pleasure to both old and young in the isolated homes. The *Youth's Companions* were especially popular. In many homes where a foreign language is spoken the larger books in English require long hours and days of work to be intelligible but the whole family delight in translating the short stories of the *Companion* when they are gathered about the fire in the winter evenings.

The periodicals were found so valuable that the Commission made an appeal for them to the citizens of the state. Many schools and women's clubs have responded and from July 15, 1897, to August 1, 1898, the Commission received gifts of 121 boxes containing books, magazines, illustrated papers and children's periodicals, besides a very large number of bundles and packages. The largest contributions came from Milwaukee, Madison and Oconomowoc, though the people of many other towns contributed liberally. A fuller statement of such gifts may be found below. The libraries at Ashland, Menomonie, Grand Rapids and other centers for local systems of traveling libraries also received scores of boxes of reading material. Rev. S. E. Lathrop, of Ashland, labored so energetically that he secured 3,656 books, 3,203 magazines and thousands of illustrated papers and children's periodicals for the Northern Wisconsin Traveling Library Association and the small public libraries near Ashland. Mr. Lathrop gathered his gifts from many states. Among the gifts to the Commission have come many thousand copies of the *Youth's Companion* from the boys and girls in the homes of well-to-do families in southern Wisconsin. Many young men and women have given files which they have carefully preserved for years. These have come with such earnest good wishes for our work that we have thought the pleasure of the givers was as great as that of the receivers, and that our work in helping to train hundreds of boys and girls in the thoughtfulness for others and the kindly generosity that makes broad-minded patriots and philanthropists has been a most valuable feature of it. The *Youth's Companions* which the Commission receives are bound in small volumes of six or seven numbers in which the most important stories are complete. The numbers are stitched with wire and bound with a cover of durable manila paper on which is printed the title of the periodical. These volumes are fairly attractive and durable. They cost but five and one-half cents each and do more good in destitute families where little reading has been done than most children's books that cost ten or twenty times as much.

In addition to the periodicals sent to traveling library stations many boxes of them have been sent to backwoods districts where the peo-

ple desired traveling libraries which could not be supplied. One community of ten or twelve families in the northeastern part of Chippewa county sent a team forty miles last April, over very muddy roads, to Chippewa Falls to get a box of periodicals from the Commission. The people of this community live about a sawmill in a great tract of forest and they wrote most gratefully of their delight in reading the books and magazines sent them. Some of the normal school institute conductors have also distributed periodicals at the teachers' meetings in the northern counties. Quite a number of people in Milwaukee and Chicago now send the current numbers of periodicals by mail directly to our traveling library stations. A magazine that was originally purchased for only one family may thus be read in twelve or fifteen households.

OLD MAGAZINES.

In the great boxes that have come from many old attics have been hundreds of old magazines. Some of these have been so old that they have been exchanged in Boston and New York for volumes of the *St. Nicholas* and *Wide Awake*, others have been exchanged with public libraries in the state which are trying to make complete sets of the popular magazines. Scores of the earlier volumes of *Littell's Living Age*, *Harper's Magazine*, *The Forum*, *Popular Science Monthly* and other magazines have been furnished to public libraries whose librarians have agreed to give numbers of current magazines in exchange.

CONTRIBUTIONS OF BOOKS AND PERIODICALS.

Nearly all the contributions mentioned were received by the Commission for the use of traveling libraries between July 1, 1897, and August, 1898, and their source is shown in the following table:

Town.	Donors or Collectors.	Contributions.
Albany, N. Y.....	Miss Mary Hawley	2 boxes books and periodicals.
Beaver Dam	Public Library	1 box books and periodicals.
Beloit.....	Woman's Club.. ..	6 boxes books and periodicals.
Fox Lake.....	Jennie McDowell.....	1 box periodicals.
Kenosha	Woman's Club.....	4 boxes periodicals.
La Crosse.....	Library and clubs.....	5 boxes periodicals.
Madison.	Woman's Club.....	150 mounted pictures.
Milwaukee.....	Many contributors	30 large boxes books and periodicals.
Mcroe	Public library	1 box periodicals.
Neenah	Robt. Shiells	1 box books and periodicals.

TABLE — Continued.

Town.	Donors or Collectors.	Contributions.
Oshkosh	Twentieth Century Club ...	2 boxes books and periodicals.
Oconomowoc	Julia Lapham, collector ...	11 boxes books and periodicals.
Poughkeepsie, N. Y.	Students Vassar College ...	1 box periodicals.
Racine	Woman's club	2 boxes books and periodicals.
River Falls	Miss Lillian Currier	1 box periodicals.
Whitewater	Normal school	6 boxes periodicals.
Wauwatosa	{ Mrs. S. K. Curtis	4 boxes periodicals.
	{ Mrs. W. J. Underwood .. }	
Unknown .....	.....	8 boxes periodicals.

Hon. W. F. Vilas, of Madison, gave nearly 500 volumes of valuable public documents which included 150 copies of "Diseases of the Horse," 40 of "Diseases of Cattle," 100 "Agricultural Year Books" and others of great value to farmers. Hon. Henry Casson, of Madison, gave 10 copies of "Diseases of the Horse," Hon. Geo. McKerrrow, of Madison, sent cloth bound copies of the "Farm Institute Bulletins" for 1896 and 1897 to each of our traveling libraries, and Prof. W. A. Henry, of Madison, sent them copies of the recent annual reports of the Wis. Agricultural Experiment Station. The U. S. Department of Agriculture sent copies of its most popular bulletins to all of these libraries. Among the Milwaukee contributors were the Sentinel Co., which sent 56 volumes of new books, the M. W. K. Club, Chas. M. Morris, G. P. Stickney, the students of Milwaukee Downer College, the Normal School and the West Side High School, with many others. The *Germania* and *Herold* secured for us many copies of German periodicals. Considerable contributions of books and periodicals were sent to us by the following citizens of Madison: L. S. Cheney, Mrs. M. A. Allen, R. G. Thwaites, Mrs. S. H. Carpenter, Prof. W. W. Daniells, Amos P. Wilder, Mrs. Lucius Fairchild and others. Mrs. M. A. Allen gave us a large painting which is to be sent from library to library.

The American Humane Society of Boston, Mass., sent 3,200 copies of "*Our Dumb Animals*," and Mrs. Geo. W. Peckham, of Milwaukee, sent a bundle of the periodicals of the Audubon Society. Geo. Hies, of New York, sent 15 copies of the "List of Books for Girls and Women's Clubs" to be sent to small public libraries. This "List" is the most helpful guide which has been published for the book committees of small free libraries. The State Historical Society has generously given volumes of its "Collections" to those of the traveling library stations which are the best conducted.

READING MATTER FOR THE SOLDIERS.

In May, 1898, the Chairman of the Commission made a call, through the papers of the state, for reading matter for Wisconsin soldiers. The response to this call was immediate and the people seemed to find pleasure in the opportunity it offered. Within two weeks the Commission received nearly one thousand volumes, something more than one-half paper covered, and thousands of magazines and illustrated papers. It was at first expected to send traveling libraries of only fifteen or eighteen volumes to each company but the soldiers in the South preferred the magazines and the heavy rains which flooded the tents made the care of cloth covered books a burden, so that only paper covered books and magazines were sent for distribution by the chaplains. If any Wisconsin regiment remains for some months in garrison in Porto Rico or Cuba the Commission will hope to send it a number of traveling libraries. To the Fourth Regiment at Camp Douglas were sent between 300 and 400 books which were under the care of Chaplain H. H. Jacobs.

The first boxes of reading matter sent to the regiments in the South went by freight and were delayed but, later, boxes were sent out by express. The officers who distributed the books and periodicals stated that they were read with avidity.

About fifteen hundred pounds of books and magazines were sent in June and July.

The following cash contributions for freight were received: Mrs. W. R. Owen, Randolph, \$1.00; C. W. Porter, Hudson, \$1.00; Women's Federation, of Berlin, \$5.00; Miss Lillian Currier, River Falls, \$0.50; Emerson Club, Whitewater, \$5.00; Woman's Club, Antigo, \$5.00; W. R. C., Menasha, \$1.00.

Town.	Collector.	Contributions.
Antigo	Woman's Club.....	1 box books.
Ashland.....	W. R. C.....	1 package books.
Baraboo.....	Mrs. R. D. Evans	1 box books and periodicals.
Beloit.....	Women's Club.....	2 boxes books and periodicals.
Berlin.....	Woman's Club	1 box books and periodicals.
De Pere.....	Women's Clubs.....	1 box books and periodicals.
Eau Claire.....	Woman's Club.....	3 boxes books and periodicals.
Fond du Lac.....	W. R. C.....	1 box books and periodicals.
Kenosha	D. A. R.....	1 box books and periodicals.
Kilbourn	W. R. C. and library.....	3 boxes books and periodicals.
La Crosse.....	Women's Clubs.....	2 boxes books and periodicals.

TABLE — Continued.

Town.	Collector.	Contributions.
Lodi	Woman's Club.....	1 box periodicals.
Markesan.....	Woman's Club.....	1 box books and periodicals.
Marshfield.....	Woman's Club.....	1 box books and periodicals.
Menasha.....	W. R. C.....	1 box books and periodicals.
Milwaukee.....	Many contributors.....	11 boxes books and periodicals.
Mosinee.....	H. M. Thompson.....	1 box periodicals.
Neenah.....	Woman's Club.....	1 box books and periodicals.
Randolph.....	Woman's Club.....	1 box periodicals.
Waupaca.....	Woman's Club.....	1 box periodicals.

Books and magazines were also received from C. W. Porter and Mr. Brooks, of Menomonie, R. G. Thwaites and others of Madison. Des Forges & Co., of Milwaukee, kindly collected and packed about 20 large boxes of reading matter for the Commission.

VILLAGE TRAVELING LIBRARIES.

In the first two years of its existence the Commission received many urgent appeals from small villages for help in starting free public libraries. Inquiries through the state showed that while many subscription libraries had been started in such villages only a very small proportion had been successful. The reason for these failures was found in the fact that the small annual income of a village library is too largely eaten up by its running expenses and too little is left to purchase frequent and adequate supplies of fresh books. If fifty fresh books are bought once a year each patron soon reads the few that interest him and then the books, though almost as good as new, are left unread and the interest in the library flags. In order to help such communities certain generous friends of the Commission offered it the means to buy sixteen "village traveling libraries" of fifty volumes each. J. D. Witter, of Grand Rapids, gave the means for eight, J. H. Stout the means for six, and the Pereles Bros. and the Social Economics Club, of Milwaukee, each gave one. The libraries, packing cases included, cost fifty dollars each. With these libraries in its control the Commission has been able to say to the village boards in villages of less than 1,500 inhabitants: "If you will establish a free public library, under the state law, we will send you a traveling library of fifty books every six months." This offer proved very attractive and the Commission could found a very large number

of village libraries on a permanent basis if it had a sufficient number of traveling libraries. The officers of the Commission have been so crowded with work that they have only found time to purchase and arrange seven of these libraries. These have been sent to Spring Green, Durand, Cumberland, Kilbourn, Thorp, Hartland and North Milwaukee. The other libraries will be ready by October, 1898, and there will be no difficulty in securing places for them under the terms of the Commission's offer. These libraries will be in series of three—each library of the series containing copies of the same books as its companions. Finding lists, or catalogs, of these libraries are made and a few words of description are given to each volume. A sufficient number of printed copies of these finding lists are sent with each library on each trip to supply one copy to each family of borrowers. These annotated catalogs have been found to add much to the value of the libraries.

THE CHILD AND THE SMALL LIBRARY.

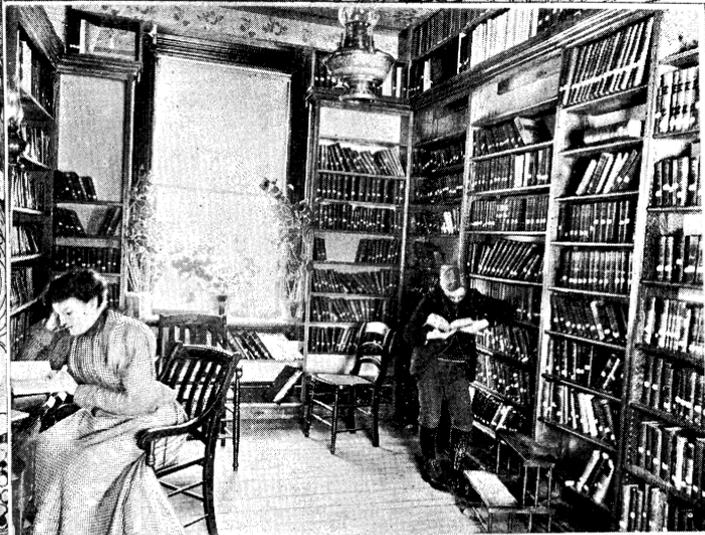
L. E. STEARNS, LIBRARIAN.

President Eliot, of Harvard College, sounded the key-note of modern library thought and spirit when he said, "It is always through the children that the best work is to be done for the uplifting of any community." The problem of the child is the problem of the state and no less the problem of the public library. "In this age of trash and printed wickedness, when a professor in one of our western universities feels tempted to say that the youth of this country would grow up to stancher citizenship and better virtue were they not taught to read; and when Frederic Harrison sees on every side the poisonous exhalations of literary garbage and bad men's worse thoughts which drive him to exclaim that he could almost reckon the printing-press amongst the scourges of mankind;" and when a study of our school statistics demonstrates the fact that the average school life of the child in the East does not exceed six, in the West five, and in the South three full years; when such facts as these confront us, then it is we realize that there should be free public libraries established and permanently maintained and that the treasures of these libraries should be brought to the child's attention at the earliest possible moment.

THE FIRST WORK WITH THE CHILD.

The modern librarian begins with beautiful picture books which she urges parents to take home to the little ones. These books not only bring happiness to the child but train his aesthetic sense and his imagination. Again, many of the city children have never seen a meadow or the country in the spring time. They know nothing of the sweet delights of nature, of birds and flowers. As the next best substitutes for these are the pictures of nature's sweetest haunts which artists have transcribed with such loving care and which are now being reproduced with such faithfulness by the aid of the new graphic processes.

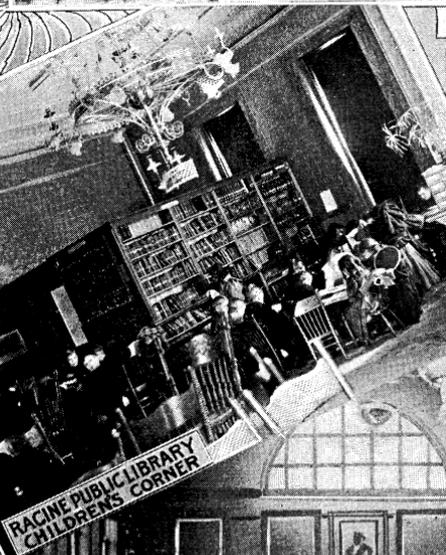
From picture-books the child goes to such works as Scudder's "Verse and Prose for Beginners," Norton's "First Heart of Oak Book,"



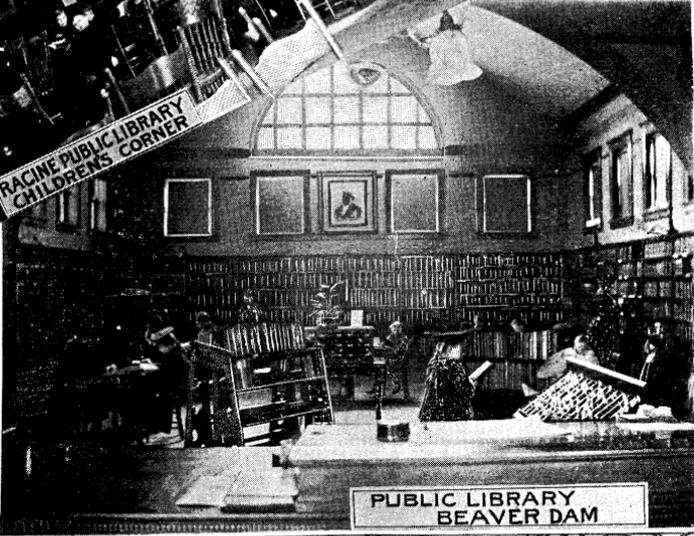
**PUBLIC LIBRARY
TWO RIVERS, WIS.**



**FREE PUBLIC LIBRARY
STEVENS POINT, WIS.**



**RACINE PUBLIC LIBRARY
CHILDREN'S CORNER**



**PUBLIC LIBRARY
BEAVER DAM**

CLARK
and
MAY



and other versions of dear old Mother Goose, which have been read and will continue to be read by countless generations. In all this first work with the child, the librarian is striving "that there may be no distinction in after years in the child's mind between reading as an art learned and reading as a delight discovered."

SYMPATHY WITH CHILDHOOD.

But to accomplish all this, the librarian must be above all else, a lover of child nature. With loving sympathy, the librarian should be able "to dig down beneath the uncouth surface of the commonest child that comes to her and discover and develop that faculty in him which is to make him fit to live in sobriety and usefulness with his fellow-men. Let us also learn to look upon every child-face that comes before us as a possible Shakespeare, or Michael Angelo, or Beethoven, or Edison; for every child has hidden away somewhere in its being this precious capacity for something creative. When we come to look upon each as a possible genius, then shall we add new dignity to human life."

It has come to be an axiom at normal schools that the individuality of the child must be preserved; that the teacher must discover the special bent of each pupil and nourish and develop it. With the surcharged curriculum and over-crowded rooms in the schools of our cities, and the multiplicity of classes under the charge of one teacher in the country districts, the modern teacher oftentimes finds it quite impossible to nurture the special aptitude of the child. It has been justly urged that we cannot have a teacher for every individual talent. This is true; but we may have large influences at work which shall reach and develop all children. This is the mission of the book, the book of inspiration and of power. Herein lies the work of the librarian. "Follow back the history of any great life. Find out what element made that life great. In almost every instance you will find that it was not the ordinary schooling, but some sympathetic drawing out of the boy's faculties—an appeal to the imagination and the spirit within him."

NO AGE LIMIT.

There should be no patronizing condescension on the part of the librarian in dealing with the child. Primarily, every child of any age should have a card in his own name. There is a juvenile pride in the ownership of a card which should not be denied him. It should not suffice to allow children under twelve or fourteen years of age library privileges through the use of the parent's card. A child of

five years, under proper guarantee, is exactly as responsible to the library as his father. Over twenty years ago, the late Dr. Poole of Chicago affirmed, in advocating the abolishment of the age limit in all libraries, that the children were his best and most careful patrons. The excuse that the small library cannot afford to buy books for the youngest readers is untenable in these days when publishing firms are putting forth such works as "Verse and Prose for Beginners," "Fables and Folk Stories," the first and second books of "Stepping Stones to Literature," "Choice Literature," "Stories of Great Americans for Little Americans," etc., etc., which may be purchased at an average cost of thirty-two cents.

ACQUAINTANCESHIP WITH CHILDREN.

After the child's interest is aroused in the simple books, the librarian should acquaint herself with the boy's or girl's special likes or dislikes in the things of life. A knowledge of a boy's collection of postage stamps may be made the inspiration of a trip around the world through the medium of such books as Carpenter's "Asia," Coe's "Our American Neighbors," Dodge's "Land of Pluck," Grohman's "Camps in the Rockies," De Windt's "Gold Fields of Alaska," etc.,—a course of reading in travel and adventure which will do much to repress a taste for the unreal vagaries of Jules Verne and kindred authors. The future Edison with a penchant for utilizing his mother's preserving jars for solutions of sulphuric acid, water, and strips of zinc and copper, should early be led to read Hopkin's "Experimental Science," Sloane's "Electric Toy Making," Meadowcroft's "A B C of Electricity," Trowbridge's "What is Electricity?" and Bonney's "Electrical Experiments." The boy who is discovered robbing birds' nests may be taught the error of his ways through a wise use of the colored plates in Blanchan's "Bird Neighbors," and like works. The fifteen year old girl who "adores the Duchess" should have her attention called in a kindly, tactful way to such books as Perry's "Hope Benham," Deland's "Malvern" and "Oakleigh," Jewett's "Deephaven" and "Betty Leicester," Howard's "One Summer," Allen's "Kentucky Cardinal" and "Aftermath," Burnett's "Louisiana," Stuart's "Sonny," Wiggan's "Polly Oliver's Problem," Dodge's "Donald and Dorothy," Richard's "Three Margarets," and other wholesome tales of happy home life.

CHILDREN'S DEPARTMENTS.

This opportunity for personal work on the part of the librarian of the small library is indeed enviable. In the large libraries this personal work is done, if at all, through special children's departments in

charge of assistants of special fitness and training. The Milwaukee library is the only one in Wisconsin which has a special room for this purpose—a large, bright room located, unfortunately, on the third floor of the new building. Here all the children's books are to be found, with the exception of the numberless duplicates sent to the public schools. The children's room has but recently been opened and it is too soon to speak of its work, but we are confident that under the wise direction of its superintendent, Miss Dousman, it will become a potent factor among the uplifting influences of the city.

THE CHILDREN'S CORNER.

In the smaller libraries, in lieu of a children's department, resort is had to a "Children's Alcove or Corner," where their books may be found within easy reach. Children's tables, made lower than the usual size, are found in libraries having reading-rooms, upon which are placed copies of the "Youth's Companion," "St. Nicholas," "Our Dumb Animals," "Birds," "Our Little Men and Women," etc., for young readers. A boy will sometimes be discovered in a cosy window-seat, deep in the mysteries of "Jack Ballister's Fortunes." At the Eau Claire and Racine Public Libraries, portions of the reading-room are used as children's corners, while special tables have been assigned to their use at Beaver Dam, Chippewa Falls, Spring Green, and Two Rivers. The unattractive walls of the Chippewa Falls library are made bright and pleasing by the aid of interesting pictures, changed frequently; while beautiful plants mark the appearance of the library at Two Rivers.

OPEN SHELVES.

There is no disputing the fact that the most popular libraries in the state and those that do the best work among the children are those that have free access to shelves. The libraries that resort to a printed catalog discover that most of its contents are a sealed book to the child, save for the easily discovered and interminable Optic, Castlemon, Alger, Trowbridge, Fosdick, and "Elsie Books," should a librarian be so unfortunate as to have any of the above-named endless and hackneyed series.

The best example of open shelves to be found in the state is at Beaver Dam, the first library to adopt the plan fourteen years ago. Here is a collection of over 7,000 volumes, without a label on a single book and yet the shelves are in perfect order at all times. This

state of affairs has been brought about by tactful, persistent work with the children who have been taught to recognize the rights of others. The young folks are made to realize, in a kindly way, that misplaced books may be a source of annoyance to themselves and to other borrowers. A simple, alphabetical arrangement, under the proper subject, is oftentimes far less confusing to the child than a sequence of such hieroglyphics as 914.97:A22 and 915.96:B23. Still, it may be said in defense of the latter that at the Stevens Point Library, where a complicated system of numbers and letters is used, the children have been trained not only to select books from the shelves but to return them to their proper places as soon as they are quickly examined and checked off by the librarian! The advantages of such a system are obvious, the books being put into instant circulation as soon as returned.

It is coming to be more and more of an axiom in library economy that "The public may be safely entrusted to care for what belongs to the public." Librarians too often come to feel, through long terms of office, a sense of proprietorship ill befitting one who should be above all else a servant of the people. "Miss or Mrs. Blank thinks she owns the library," is a remark heard not infrequently in some cities. Rules and restrictions are made more and more onerous and burdensome instead of less and less so, as the privileges of the library become more and more appreciated by the people. Teachers are denied access to shelves while looking up references for their pupils, club women and students are shut out and even library trustees have been refused admittance!

We do not advocate free access in all cases. It has proved disastrous where the librarian was immature and generally inefficient. Neither would we always advocate the plan for the first few days or weeks during the popular excitement attending the opening of the new library. After the novelty has worn away, a rainy or quiet day could be used to inaugurate the system, giving opportunity for personal instruction as to the proper arrangement of the books on the shelves. This individual attention could be gradually extended till all are participants in the benefits of the system—which embrace a great saving of time on the part of the public and librarian alike, and deep and lasting pleasure and satisfaction to all concerned.

THE LIBRARY AND THE SCHOOL.

The most cordial relations should exist between the library and the school authorities. The librarian should be in touch with the school work, keeping in advance of the rotation in studies and subjects for

debate so that the wants of the pupils may be supplied without delay. Personal visits to the schools and talks to the pupils at "morning exercises" on "Jolly Good Books for Boys" and kindred subjects will go far in arousing an interest in the best literature. Where the library is situated at some distance from the schools, it is sometimes deemed best to send small collections of books on various subjects to the schools to be issued to the pupils by the class-teachers. Where conditions admit, classes should be brought to the library for special talks on the use of reference books and kindred topics. Several libraries in our state are favored with lecture-halls, the use of which for educational purposes, should be as free as the reading room. Stereopticon lectures should be given, embracing tours of the world, trips to the Klondike, and visits to famous art-galleries—thus enlarging the mental horizon of the people and giving pleasure to young and old.

USE OF PICTURES.

Many libraries, that have reading rooms, fail to utilize the abundance of material at hand for collections of pictures to supplement school and club work. Most of the weekly periodicals used on reading tables become too soiled or worn to be worth binding. The best of the illustrations should be cut from these and mounted on dark gray or manila tag board. They should then be classified, if possible, and port-folios should be arranged for various countries, art subjects, etc., to be loaned to individuals, schools and women's clubs. Much valuable material of this nature may be collected from attics and store-rooms. Samples of proper mounting board may be obtained upon application at the office of the Commission.

The Woman's Club at Monroe has placed large photographic reproductions of famous paintings on the walls of the library—an idea most worthy of imitation.

THE MAXSON BOOK MARK.

We note with pleasure the wide-spread use of the Maxson Book Mark throughout the state and country. It is not copyrighted and may, therefore, be used by any one. Its little story appeals to all and results in greater care and appreciation of books. The book-mark was written off hastily during a meeting of the library board of the Mabel Taintor Memorial Library at Menomonie, Wis., by a trustee, the late Rev. Henry Doty Maxson. The Library Commission will gladly supply copies to all who desire, free of charge. The use of the book-mark has aided in the establishment, in various places, of the

CHILDREN'S LIBRARY LEAGUE.

The first Children's Library League was started in Cleveland, Ohio, in March, 1897. Under this plan, each child who wishes to become a member subscribes to the following agreement, printed on the membership card:

HONOR ROLL OF THE LIBRARY LEAGUE.

"We, the undersigned, members of The Library League, agree to do all in our power to assist the librarian in keeping the books in good condition."

"We promise to remember that good books contain the living thoughts of good and great men and women, and are therefore entitled to respect."

"We will not handle any library book roughly or carelessly, will not mark it, turn down leaves nor put anything into it thicker than a slip of paper."

"We will also do all in our power to interest other boys and girls in the right care of books, and will report all which we find in bad condition."

On the reverse side of this agreement is printed:

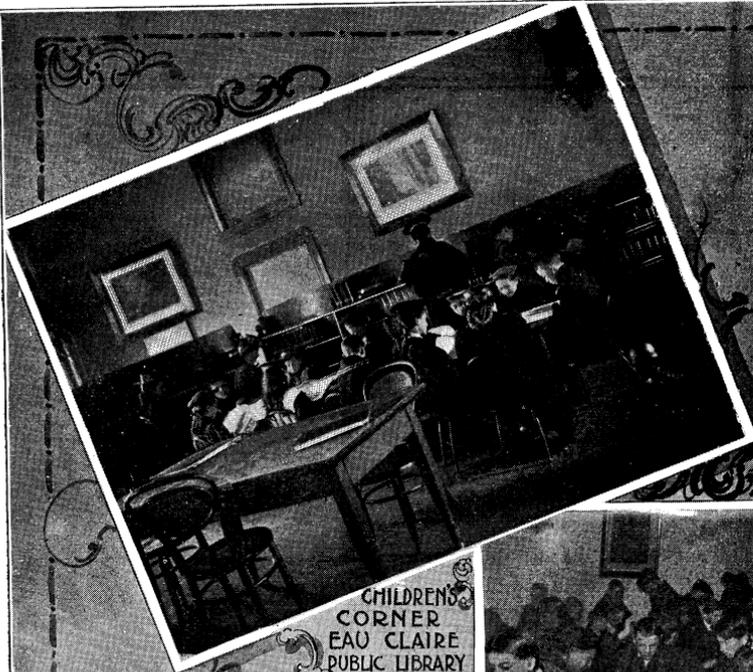
LIBRARY LEAGUE HONOR CARD.

"This certifies that living at has signed the agreement of the Library League, in the Honor Roll Book of the League, and hereby becomes a member in good standing."

Card No.

The League sprang into great popularity and the Honor Roll Book contains thousands of names. A little badge, supplied at a small cost, is worn by the members for purposes of identification at the library. In writing of the League, Miss Eastman says, "We are going to begin with the children in training people to care properly for books. We feel that that is only a small part of the work and that there are infinite possibilities in it, giving us a hold on the children which will enable us in many indirect ways to direct and guide their reading."

The Library League at Eau Claire was organized on Washington's birthday of this year. Notices of the formation of the League were circulated through the newspapers and schools, and as a result the library was packed with young folks. Three hundred children have signed the pledges modeled upon those of the Cleveland League, with the exception of the added declaration, "We will try while in the library to step lightly and whisper as little as possible." The latter clause is made necessary through the use of a part of the reference or reading room for the children's corner. Red ribbon badges are



CHILDREN'S
CORNER
EAU CLAIRE
PUBLIC LIBRARY



PUBLIC LIBRARY
CHIPPEWA FALLS



AMUSEMENT
ROOM
MONROE
PUBLIC LIBRARY



furnished to the members. Further details of the plan may be had upon application to Miss E. D. Biscoe, Public Library, Eau Claire, Wis.

AN AMUSEMENT ROOM.

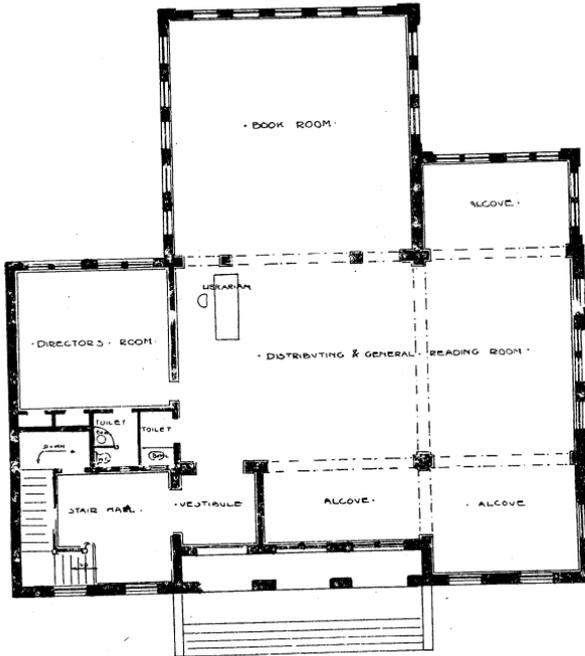
The Monroe Free Public Library enjoys the distinction of being the only library in the state to which has been added an amusement room for the youth of the city. The games were purchased with the receipts from a base-ball match played by the business men of the city. Some of the members of the Woman's Club of Monroe are overseers of the room in turn, the room being open every evening in the week, Sundays excepted, from seven to nine o'clock. The games include sliced animals and maps, jack-straws, checkers, chess, crokinole, carroms, etc. The boy-visitors are most orderly and do not disturb the comfort and quiet of the readers in the library room adjoining. The idea is to be heartily commended where proper supervision is available. The Monroe library, supported by a meagre appropriation from the school funds, is not limiting its influence to the school-children alone, but is a veritable centre of happiness for the entire community.

Where amusement rooms are impossibilities, owing to lack of space, we would suggest that games and small magic lanterns, with suitable slides, be purchased to be loaned for home use.

TO THE PARENTS.

The greatest complaint among librarians of the present day is the lack of supervision of the child's reading on the part of the parent. So long as the child is quiet and "keeps out from under foot," it matters not whether or no he is engaged with the delightful recital of the crimes outlined in "The Dead Sport or The Bushwhacker Avenged;" or whether or no the fifteen-year-old girl is steeping herself in Dora Brier's "By Passion Rocked"—books that are circulated from hand to hand through the medium of an Underground Traveling Library system which the librarian is powerless to prevent. The best remedy for such an evil as this is found in the home, where the parents make a practice of reading aloud some simple stories at the family fireside. Horace E. Scudder has said, "There is no academy on earth equal to a mother reading to her child." The prettiest spectacle ever seen by the writer was that of a mother who gathered her five little children about her at the piano and accompanied them through three or four sweet little songs—followed by the mother reading, for the hundredth time, perhaps, one of the dear old fairy tales

taken from that treasure, Scudder's "Children's Book." Children, such as these, accustomed to hearing only the best, in music, song and story, from their earliest infancy, will not forsake such standards for "rag time" music, "After the Ball," or the "Heavenly Twins." The wise mother early recognizes the fact, as does the wise librarian, that "What we make children love and desire is more important than what we make them learn."



FIRST FLOOR PLAN.
 HENRY J. VAN ZYK ARCHITECTS.
 GERRIT J. DE GELLEKE MILWAUKEE, WIS.

Plan of the first floor of the Elisha D. Smith Library Building. For description see opposite page.

THE ELISHA D. SMITH LIBRARY.*

Reprinted from the *Library Journal*, December, 1897.

On November 21, 1895, at the request of Miss Lucy Lee Pleasants, a number of the leading citizens of Menasha assembled in the parlors of the principal hotel to declare their willingness to promote the establishment of a free public library. Here the scheme would probably have perished in its infancy if Mr. E. D. Smith, a prominent manufacturer, had not offered to head a subscription list with \$500 if \$1,000 could be raised from other sources. Several men and women agreed to solicit the money and so the enterprise was launched.

Some dark days of discouragement succeeded this first outburst of enthusiasm. Mr. Hutchins, of the State Library Commission, visited the community with words of counsel and encouragement; but it seemed a far cry to a thousand dollars and the spirits of the projectors had sunk to a low ebb indeed, when an old citizen came forward and said that two of his daughters had married men who could not read, and that because he wanted to help the cause in some way he would make the shelves for the future public library.

After this things seemed to get brighter, the subscription list began to grow "like a garden full of snow" as the nursery rhyme has it, and a request was soon sent off to the officers of the State Library Commission for a list of wholesome popular books. A firm of lumber dealers gave the shelving, a small boy who had learned to print made the borrowers' cards, a poor woman scrubbed the floor as her offering, and as many ladies as the two little rooms could hold came to paste in the book-pockets and to cut the leaves. The library commission sent an experienced cataloger to put things to rights, as its donation, and the library was then opened to the public, with Miss Pleasants in charge.

Each succeeding day found the two small rooms crowded with patrons. German books were purchased for the older German folk and a list of Polish books was made out by the Polish priest for the aged ones of his little flock. Knowledge of the existence of the library spread among the poor like fire in dry grass. Women came in twos and threes, with woolen mufflers over their heads; men, grimy with work, scarcely waited to take their black pipes out of their mouths

* For views of the building erected by Mr. Smith see the frontispiece and page 20.

before they stumbled up the library stairs, while children, when the supply of young folks' literature was temporarily exhausted, hung about the doors all Saturday afternoons, in the hope of getting a book that some one else came to return.

When the people were asked to support the library with a tax the measure was carried by a rousing majority, despite the hard times. Then Mr. E. D. Smith, who had only been waiting to see the library put on a firm basis, carried out his long-cherished project, and gave the city \$30,000 for a library building and endowment fund.

It is the intention of Mr. Smith, the donor, Miss Pleasants, the librarian, and the board of directors of the library to make this library, at the suggestion of the library commission, the center of educational activity for the city and county. The second floor of the library will contain an auditorium, seating 600, which may be divided, when necessary, into smaller rooms for study clubs, etc. Here series of popular lectures will be given. It is also the intention of the board of directors to take advantage of the new library law, which enables a library board to make contracts with the boards of supervisors of neighboring townships, at a nominal sum, by which books may be loaned to the farmers and other residents in the surrounding towns. With the completion of the new building Mr. Smith will also establish a system of traveling libraries in the district, with the Menasha library as its center.

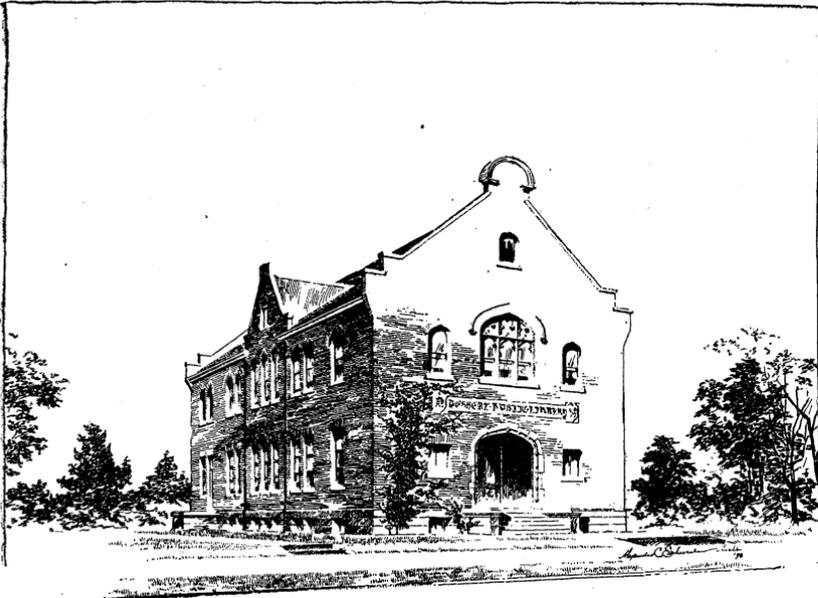
The new library building, which is shown in the frontispiece, is 40x70 ft., two stories high, with a 30x30 one-story book-room. The cost was about \$20,000. The first story contains the book-room, directors' room, toilet-rooms, general reading-room, with alcoves for newspapers, magazines, and children's tables; all of the alcoves, book-room, and vestibule being under observation from the librarian's desk, and making it possible to carry on the work of the library with one attendant. In the basement is placed the heating plant, bicycle-room and toilet-rooms. The approach to the building is by means of wide stone steps leading up to an arcade of three arches in the center of the building. The entire exterior is of buff Bedford limestone and the roof of tile.

The structure occupies a corner lot overlooking the river and is in a location so central that it is hoped that many people will be beguiled from the bustling traffic of the highway into the pleasant by-paths of learning.

DESSERT PUBLIC LIBRARY.

Joseph Dessert, Esq., of Mosinee, one of the Wisconsin pioneers, is about to erect a beautiful library building which he will equip and maintain for the benefit of the residents of his home town and vicinity.

The building, a cut of which is shown herewith, is to be of brick, with a stone foundation. It will be 36x72 feet, two stories, with basement. On the first floor will be a reading room, 27x34 feet, the librarian's office 11x14 feet and the book room 14x22 feet. On the second floor will be an opera hall 46x34 feet, with a stage 17 feet wide. The building will be a very handsome one and will be finely fitted for its purpose. It will cost about \$5,000.



As the village of Mosinee contains but about 600 inhabitants, Mr. Dessert has provided an ample and beautiful home for all the intellectual and social organizations which are needed to supplement the educational work of the schools and homes. No other village in the state, of many times its size, has so beautiful a library building as Mr. Dessert has provided for Mosinee and his wisdom and generosity should inspire the emulation of other wealthy men in small villages.

WISCONSIN SUMMER SCHOOL OF LIBRARY SCIENCE.

The need of some form of library training for those who cannot afford to attend the longer terms at the regular library schools was long recognized in Wisconsin. Such a course was not made possible, however, until the summer of 1895 when, through the generosity of the Hon. J. H. Stout, a summer school of library science was established in connection with the University Summer School at Madison. Miss Katherine L. Sharp, then in charge of the department of library science of the Armour Institute, Chicago, Ill., was the director for the first two years and was succeeded by Miss Cornelia Marvin, librarian of the Scoville Institute of Oak Park, Ill. Senator Stout paid the expenses of the school the first two summers, but the school is now self-supporting, a fee of \$15 being charged.

The purpose of the school is not to make the inexperienced fit for library service, but to give those in charge of small libraries and library assistants some knowledge of elementary library methods. The course comprises a six weeks' term, beginning the Monday following the fourth day of July. The instruction follows the treatment of a book in logical order through all processes in the library, from the time it is added to the accession or invoice book, until it has been classified, cataloged, loaned to reader, repaired, and rebound, with 24 lessons in the Dewey and Cutter classifications. The work does not end with theoretical lectures merely, but from three to five hours a day of independent practice work is expected of each student, tending towards self-reliance in future work. This independent work is carefully revised and returned, each student thus carrying home a full set of samples which are invaluable for future reference. No text-books are used; the instruction is entirely by lecture, demonstration, and laboratory work. For example, one principle of the card catalog is explained in class by means of the blackboard and samples, then a number of books illustrating this principle are assigned for independent work and the result, when handed in, is carefully revised and returned to the student. In classification, the principles are taught by actually classifying books and students are given the practice with the notation of the Dewey Decimal and the Cutter Expansive

classifications, as these two systems are most widely used. In ordering, the details of making an order and of keeping necessary records are followed by a discussion of the general principles of book-buying. Instruction in book-making and binding is illustrated by visits to local publishers and binderies. Visits are also paid to the historical, city, and university libraries in Madison.

Special lectures were given in 1898 on book-buying, library associations, librarianship as a profession, traveling libraries, historical collections, children's reading, etc. The Library Bureau makes an exhibit of library appliances each year.

It has been thoroughly demonstrated that the summer school is not, as was feared, a harmful short-cut to superficial training, but rather a good step in the right direction. The summer school has proved an active and living factor in the promotion of library interests in Wisconsin. New libraries are springing up in many little hamlets. These libraries must largely depend for their administration upon the local, inexperienced applicant. An isolated public library under inexperienced management loses most of its opportunities for good through ignorance of methods and facts that may be comparatively easily learned. Through attendance at the summer school many points dealing with administration are gained, and, best of all, the students become imbued with what has come to be known as "the library spirit."

The membership of the Wisconsin Free Library Commission feel confident that most of our Wisconsin libraries could profitably use some of the money intended for other purposes to help their librarians to attend this summer school.

STUDENTS OF THE SUMMER SCHOOL.

1897.

Bell, Martha W.....	Beloit, Wis.....	
Brownrigg, Lillian F.....	Manistee, Mich.....	
Currier, Lillian.....	River Falls, Wis.....	High School.
Doolittle, Hattie A.....	Beaver Dam, Wis.....	Normal School.
Dousman, Mary E.....	Milwaukee, Wis.....	Public.
Gerend, Frances E.....	Sheboygan, Wis.....	Public.
Gruwell, Mrs Ida.....	Marion, Ind.....	High School.
Harter, Lyle.....	Huntington, Ind.....	Public.
Lesure, Madge.....	Menomonic, Wis.....	Public.
McNeill, Anna H.....	Milwaukee, Wis.....	
McIntosh, Margaret.....	Milwaukee, Wis.....	Normal School.
McNair, Bessie.....	Lancaster, Wis.....	
Raymond, Mrs. Alice.....	Grand Rapids, Wis.....	Public.
Richards, Mary.....	Clark's Hill, Ind.....	
Silverthorn, Nellie C.....	Wausau, Wis.....	Public.
Smith, Elizabeth.....	DePere, Wis.....	Public.

STUDENTS OF THE SUMMER SCHOOL—Continued.

1898.

Babbitt, Grace	Normal, Ill.	Normal School.
Campbell, Gertrude	St. Cloud, Minn.	Normal School.
Carpenter, Mary F.	Madison, Wis.	Apprentice, Madison.
Carr, Lucy L.	Madison, Wis.	Public.
Chapel, Clara	Evansville, Wis.	Public.
Early, Amy M.	Oak Park, Ill.	Normal School.
Farr, Alice	Mankato, Minn.	Normal School.
Hainke, Hulda	Milwaukee, Wis.	Apprentice, Racine.
Hambright, Florence E.	Racine, Wis.	Public.
Humphrey, Evelyn	South Bend, Ind.	Public.
Lewis, Kate	West Superior, Wis.	Public.
McDill, Kate	Chicago, Ill.	Apprentice, Oak P'rk,
McGraw, Minnie A.	Mankato, Minn.	Ill.
MacPherson, Maude R.	Ottawa, Canada	High School.
Meilander, Mary	Elgin, Ill.	Public.
Richardson, Mary P.	Milwaukee, Wis.	Public.
Russell, Janet	Merrill, Wis.	Public.
Scheeler, Mrs. M. P.	Marshalltown, Iowa	University.
Skinner, Frances L.	Evanston, Ill.	University.
Stone, Walter King	Columbia, Mo.	University.
Swen, Earl Greg	Cedar Rapids, Ia.	Public.
Thorne, Gertrude	Winnetka, Ill.	High School
Tousley, Bina	Lake Mills, Wis.	Apprentice, Oak P'rk,
Woodward, Katherine A.	Oak Park, Ill.	Ill.

WISCONSIN STATE LIBRARY ASSOCIATION.

The Wisconsin Library Association was organized in 1891 and has held seven annual conferences. It invites to its membership not only librarians, library trustees and teachers, but all friends of libraries. Its meetings are enthusiastic and inspiring and have done much to develop the great interest in public libraries which is so noticeable a feature of Wisconsin life. The programs of the association are interesting and helpful, the social atmosphere is congenial and new members are cordially welcomed and made to feel at home. One session of the association is given to trustees, whose ranks include many of our citizens who are distinguished for scholarship, public spirit, and business, political and executive ability. No one who is interested in libraries can afford to miss these annual conferences. The progressive libraries are finding it profitable to require their librarians to attend these meetings and also to pay their expenses.

Persons wishing to join the Association may do so by sending their name and the fee (fifty cents) to the Secretary, Miss Agnes Van Valkenburgh, Public Library, Milwaukee, Wisconsin, and they will receive copies of all circulars. Dr. E. A. Birge, of Madison, is President and Miss Maude A. Earley, of Chippewa Falls, is Treasurer.

SIXTH ANNUAL CONFERENCE.

The sixth annual conference of the Wisconsin Library Association was held at Milwaukee, Wis., on Feb. 22 and 23, 1897. The following libraries were represented: Appleton, Ashland, Beaver Dam, Beloit, Eau Claire, Fond du Lac, Fort Atkinson, Grand Rapids, Green Bay, Janesville, Madison, Menomonie, Monroe, Oconomowoc, Oshkosh, Sheboygan, Two Rivers, Wauwatosa, West Superior; the State Historical and University libraries of Madison, Wis.; the Whitewater, Platteville and Stevens Point normal schools; the Armour Institute of Technology; the Public Library of Chicago; and the Evanston (Ill.) Public Library. The State Federation of Woman's Clubs, the Woman's School Alliance, and the National Household Economics Association were represented by a number of delegates.

The sessions were opened with an address of welcome by J. M. Perels, president of the Milwaukee Public Library board, to which response was made by F. A. Hutchins, president of the association. Mr. Hutchins then made a talk on "traveling libraries in Wisconsin." The talk was illustrated with a sample library and photographs of the localities to which the books are sent.

Mr. Hutchins was followed by Miss Janet M. Green, secretary of the Northern Wisconsin Traveling Library Association, who read a paper on the work done by that organization. The association has received donations from all parts of the country and is in a prosperous condition. Much interest is evinced in the work in the northern counties.

The secretary read a letter from the librarian of one of the Witter traveling libraries in Wood county, expressing great appreciation of the donor's kindness.

Miss M. L. Clark, vice-president for Wisconsin of the National Household Economics Association, read the resolutions passed at the recent session of that body, endorsing the traveling library movement and pledging co-operation in the movement as the best means for diffusing literature on sanitary and household subjects in the rural districts.

"Traveling pictures" was the subject of an interesting paper by Miss Mary E. Tanner, teacher of drawing at the Stevens Point Normal School. Miss Tanner explained ways of mounting the pictures, and exhibited a number of pictures similar to those now being circulated in Wood county. Miss Tanner's illustrations were reinforced by an exhibition by Mrs. W. W. Sherman, of Milwaukee, of large photographs suitable for such purposes.

Senator J. H. Stout, of Menomonie, Wis., opened the general discussion of traveling libraries and pictures. Senator Stout referred to the bill now pending in the state legislature, which provides for an increased appropriation for the use of the state library commission, and stated that it was hoped to start a state system of traveling libraries in the near future. Senator Stout advocated the organization of associations in the country districts for the discussion of such topics as "good roads," as he considered good roads to be an important factor in the furtherance of the traveling library movement. Mr. Stout was followed by Dr. E. A. Birge, Madison, Wis., and Rev. S. E. Lathrop, of Ashland.

Upon the conclusion of the afternoon's addresses, the 80 delegates from out of town were invited to gather around two large tables, upon which supper was served by the members of the Milwaukee Library Round Table. Opportunity was given for an inspection of the library before the opening of the evening session, which was devoted to the trustees' section, and presided over by Dr. E. A. Birge, trustee of the city library at Madison. In opening the discussion, Dr. Birge alluded to the rapid growth of the association and the increasing interest taken in its sessions. He spoke of the education the trustees and librarians were receiving through the discussions at the annual meetings, and stated that things had not been going so well for the lazy trustee and the indifferent librarian since the organization of the association. Communities were becoming aroused to the importance of the part libraries may take in the education of the people, which fact augured well for the further advancement of library interests.

Mrs. E. E. Vaughn, founder of the Vaughn Library at Ashland, Wis., then spoke on the "Responsibility of the trustee to the library." Mrs. Vaughn made a plea for sympathetic interest in the library on the part of the trustee, and also urged the appointment of trained librarians at the head of small libraries, thus relieving trustees from much of the labor involved in the management of the library. Dr. Peckham, of the Milwaukee Public Library, spoke in the dual capacity of trustee and librarian, having been a member of the Milwaukee library board for many years before assuming the position of librarian. Dr. Peckham stated that a distinct line should be drawn between the work of the trustee and the work of the librarian. The librarian should be in every sense the executive officer of the library, the board determining the general policy of the institution.

Dr. Peckham was followed by the Hon. John Johnston, trustee of the Milwaukee library. Mr. Johnston said that the duty of library trustees was plain; that they should first select the best librarian to be found and then let him do as he pleased.

Dr. Birge then called upon Col. J. W. Thompson, president of the Illinois State Library Association and trustee of the Evanston (Ill.)

Public Library. Col. Thompson stated that the relation between the trustee and librarian should be that of mutual confidence and cordiality; that there should be oneness of effort and oneness of aim.

Miss Cornelia Marvin, reference librarian of the Armour Institute of Technology, then read a most comprehensive paper on "Library training schools." In the discussion following, Dr. Birge, as one of the directors of the University Summer School, paid a high tribute to the able manner in which the Library Summer School had been conducted by Miss Katharine L. Sharp, of Chicago.

Mrs. Chas. S. Morris, president of the State Federation of Women's Clubs, then read a paper which had been deferred from the afternoon meeting, on "Traveling libraries and study clubs." Mrs. Morris's paper was one of the best of the conference. It referred to the efforts being made by the clubs in Wisconsin for the establishment of traveling reference libraries, and pledged the heartiest co-operation in the state traveling library movement. One of the first committees to be appointed by the new federation was that on library co-operation.

The session on Tuesday morning partook of the nature of a round table conference and was opened by a paper on the "Wisconsin summer school of library science," written by Miss Margaret G. Pierce, of Cleveland, Ohio, and read by the secretary. Miss Pierce spoke of the school as inspiring new ideals, its sessions being deemed of the utmost helpfulness to those experienced and inexperienced in the library profession.

Miss Sue C. Nichols, of Fort Atkinson, Wis., then made a talk on the question, "Shall we give access to shelves?" A vote taken after the discussion showed that a large majority of the librarians present allowed patrons to help themselves.

Mrs. Sarah H. Miner, of Madison, Wis., then opened the discussion of "The two book system" by a comprehensive paper on the methods and purposes of the modern innovation. In small libraries it was deemed advisable to limit borrowers to one work of fiction at a time, and the general opinion was in favor of restricting the privilege to adults, to prevent over-reading on the part of the children.

Miss Mary J. Doolittle, Beaver Dam, Wis., advocated the purchase of duplicates of the best books, rather than an attempt to get a variety of mediocre literature.

Miss Agnes Van Valkenburgh, of the Milwaukee Public Library, made a plea for the purchase of many good popular novels and protested against attempts at keeping down the percentage of fiction to the detriment of the library's popularity among hard-working people.

"Foreign fiction in small libraries" was the subject of an interesting paper by Miss Lucy Lee Pleasants, of the Menasha Public Library. Miss Pleasants urged the purchase of books for the foreign population in their native tongue on the pleas of taxation and public happiness.

In "A diffident child's first visit to a library" Miss Minnie M. Oakley, Madison, Wis., allowed the child to speak for herself, and she told in an entertaining way of her visits to the "Centerburg," Beaver Dam, Milwaukee, Minneapolis and Jamestown (N. Y.) public libraries and of the reception she was accorded at each.

The question-box was then opened and found to contain questions on the best magazine bindings, hours of opening, reservation of books, etc., etc., the questions being answered by the committee of the whole.

The delegates assembled after dinner at the State Normal School for the "Libraries and schools" session, which had been planned with a view to interesting the future teachers in the mutual relations which should exist between the two great factors in education.

Miss M. E. Ahern, Chicago, Ill., secretary of the library section of the National Educational Association, read a paper on the objects and

aims of the library section. Miss Ahern, on behalf of the section, requested that delegates be appointed from the library association to attend the forthcoming meeting of the N. E. A. in Milwaukee, in July, 1897. The entire membership of the Wisconsin Library Association will constitute the delegation to this meeting.

Miss Irene Warren, librarian of the Stevens Point Normal School, read an interesting paper on the "Normal School Library." Miss Warren has library reading classes, gives instruction in the use of books, etc., and has started home libraries as object lessons to students along philanthropic lines. Miss Warren's paper was discussed by Miss E. P. Swan, of the West Superior (Wis.) Normal School, and by Miss Schreiber, of the Milwaukee Normal School.

"The use and abuse of township libraries" was the subject of an interesting paper by W. H. Cheever, institute conductor at the Milwaukee Normal School.

Miss Mary E. Dousman, of the Milwaukee Library, discussed "The best 25 books for children from 5 to 11 years of age," and Miss Anna H. McDonnell of the Green Bay Public Library, performed a like service for the best 25 books for children from 11 to 16 years of age. The lists of books were printed by the state library commission and were distributed at the meeting.

Miss Mary F. Hall, primary supervisor of the Milwaukee schools, read a most original and helpful paper on "Books of adventure for boys."

At the short business session in the morning, the president and secretary declined re-election and the following officers were thereupon elected: President, Dr. E. A. Birge, trustee city library, Madison; First Vice-president, Dr. G. W. Peckham, librarian Milwaukee Public Library; Second Vice-president, Mrs. E. E. Vaughn, founder Vaughn Library, Ashland; Secretary, Miss Agnes Van Valkenburgh, Milwaukee Public Library; Treasurer, Miss Maude A. Earley, librarian Chippewa Falls Public Library.

L. E. STEARNS, Secretary.

JOINT MEETING AT EVANSTON, ILL.*

February 21 and 22, 1898.

The Wisconsin Free Library Association united with the library associations of other neighboring states in a joint meeting at Evanston, Ill., on February 21 and 22, 1898. This meeting proved most interesting and successful.

There were present 171 delegates, representing the following states: Illinois, Wisconsin, Ohio, Michigan, Iowa, Minnesota, Missouri, New York, Rhode Island and Massachusetts.

The meeting was opened at 2:30 p. m. on Monday, Feb. 21, in the assembly hall of the Orrington Lunt Library, of Northwestern University. Col. J. W. Thompson, president of the Illinois Library Association, presided, and briefly stated the motives and aims of the conference—which were to cultivate wider acquaintance among librarians and to bring about closer relations between college and public libraries. President Henry Wade Rogers, of Northwestern University, delivered the address of welcome. Miss L. E. Stearns, of the Wisconsin Free Library Commission, followed with a talk on "How to organize a public library in a small town." "The two book system"

*Abridged from report in *Library Journal*, March, 1898.

was considered by Dr. E. A. Birge, and an interesting discussion followed, opened by Mr. H. M. Utley, of the Detroit Public Library.

Miss Linda A. Eastman spoke on "The library and the children," reviewing the work done in this direction at the Cleveland Public Library, and after informal discussion and some minor business the session was adjourned. In the evening, the conference listened to an inspiring address by Dr. E. G. Hirsch, of Chicago, on "The library a people's university," after which an informal reception was held in the rooms of the University Guild.

Tuesday morning the session opened at 9:30, Dr. E. A. Birge presiding. Reports on state aid to traveling libraries were called for, and given for Iowa, Ohio and Michigan. Mrs. Lana H. Cope, state librarian of Iowa, reported the success of the system in that state, where 200 applications are on hand for the use of the 50 libraries established by the state library in 1897, and where a bill asking for the appropriation of \$10,000 for the extension of the work has just been introduced into the legislature. Ohio was represented by Miss E. H. Smythe, of the state library, who said that up to February, 1898, 200 libraries of 25 volumes each had been sent out, and a special appropriation was hoped for this year. Mr. Utley spoke for Michigan, in the absence of the state librarian, stating that ever since the adoption of the system, in 1895, the demand for libraries had far exceeded the supply.

"The history and legal standing of the Ohio State Library Commission" was the subject of a paper by R. P. Hayes, president of the Commission, which was of far broader scope than the title would imply. It was in fact a summary of library legislation as a whole. Judge C. G. Neely, of Evanston, spoke on "Libraries in jails," stating that the "prison population" of the United States was 82,000 in 1890, and urging the importance of establishing jail libraries and making them influences for good.

"Libraries in manufacturing communities" were described by Mrs. M. A. Sanders, of the Pawtucket (R. I.) Public Library, who also spoke of her work in connection with reform schools. She said: "If there are two things that go hand in hand, it is libraries and reform. If there is anything in library work it is in its missionary work. The library's work is in reaching the people as well as in spreading the reading of books. There is nothing that can do better work in reformatories than libraries."

F. A. Hutchins, of the Wisconsin Free Library Commission, reviewed "Recent library legislation in Wisconsin," giving an interesting account of the notable library development in that state. The morning session was closed promptly to allow the visitors to reach the Evanston Free Public Library in the city hall at 12 o'clock, where luncheon was served by the young ladies of the library staff. While it was in progress, Miss Hazeltine, of the James Prendergast Library, of Jamestown, N. Y., was introduced, and in a few graceful words announced the coming conference of the American Library Association at Lake-wood-on-Chautauqua, and on behalf of the local committee, of which she is chairman, extended a cordial invitation to all to attend the conference in July.

On Tuesday afternoon, section meetings were held, one for assistants, and one for consideration of college, school, and reference library work. The former was presided over by Mr. F. W. Faxon, and opened by a practical paper on "Arranging and cataloging scraps" by Miss M. M. Oakley, of the Wisconsin State Historical Society. Mr. C. H. Foye, of the John Crerar Library, spoke on the care of pamphlets, and advocated individual binding rather than combining many pamphlets into one volume. The Sunday-school library was the subject of a paper by William Yust, of the University of Chicago Library, based upon

data obtained through personal examination of the Sunday-school libraries of Chicago. "Book-binding from a librarian's standpoint" was discussed by Miss Gertrude Woodard of the State Normal Library, of Ypsilanti, Mich., whose interesting talk abounded in practical hints; and Miss Gratia Countryman presented a capital paper on "Should public libraries purchase books in foreign languages for foreigners in their cities?" answering the question in the affirmative, as the result of practical experience.

The college section met in the memorial hall of Garrett Biblical Institute, Miss Katharine L. Sharp presiding. An interesting discussion of the high school library and its relation with the public library was held. It was opened by Miss Stearns, who described the organization of the Library Department of the N. E. A. in Buffalo in 1896, and the appointment of a committee at the Milwaukee conference of 1897 to report on a list of books suitable for all grades. Miss Coffin, of the Aurora (Ill.) Public Library, spoke of the library maintained by one of the high schools in that city, and Miss Cornelia Marvin emphasized the need of good catalogs, the use of reference-books by pupils, and a competent librarian as the essential features of a high school library.

Mr. C. W. Andrews, of John Crerar Library, described "The analytical card index to current periodicals undertaken by the Publishing Section of the A. L. A.," and Miss E. D. Swan, of Purdue University, spoke on "The care of college and school catalogs."

Methods of obtaining and preserving the theses presented to universities by candidates for degrees were discussed by Mr. A. H. Hopkins, Mr. Smith of the University of Wisconsin, Mr. Torry of the University of Chicago, and others, and it was decided to refer the subject to the College Section of the A. L. A. for further consideration.

The final session was held on Tuesday evening, Mr. R. P. Hayes presiding. Mr. F. W. Faxon spoke on the "Use of magazines in reference work," and Miss Merica Hoagland, president of the Indiana Union of Literary Clubs, presented a paper on "Libraries and literary clubs."

Resolutions thanking all those who had so effectively contributed to the pleasure and profit of the conference, and extending the thanks of the conference to Mr. W. W. Bishop, chairman of the program committee, were unanimously carried. This closed the session, and after a pleasant social hour spent in the reading-room, where were displayed some of the rare books belonging to the university, the final good-byes were said and the inter-state conference was a thing of the past.

DISTRICT CONFERENCES.

The Commission has held meetings in various parts of the state in connection with local organizations to arouse the interest of librarians, library trustees, teachers and members of the women's clubs who have not attended the state meetings. These conferences have been very successful and have made many new friends for the library movement. One of these meetings was held in Oshkosh Jan. 28 and 29, 1898. Practical questions of library management were presented and discussed by G. C. Jones, of Appleton, Miss E. D. Biscoe, of Eau Claire, R. G. Thwaites and E. A. Birge, of Madison, Miss M. A. Skinner, Miss H. C. Magee and Judge C. D. Cleveland, of Oshkosh, Mrs. Alice Seeney, of Marinette, Miss Agnes Van Valkenburgh and Miss M. A. Dousman, of Milwaukee, F. G. Kraege, Miss A. H. McDonnell and Mrs. F. E. Teetshorn, of Green Bay, and the officers of the Commission.

February 11 and 12, 1898, the Commission and the Northern Wisconsin Traveling Library Association held a joint meeting at Ashland, which was well attended and inspired much enthusiasm. The chief topics of discussion were traveling libraries and the relation of the public libraries and the schools. At the close of the meeting the Traveling Library Association elected the following officers for the ensuing year: President, Mrs. E. E. Vaughn, Secretary and Treasurer, Janet M. Green, Vice-Presidents, Dr. Edw. Ellis, Prof. H. W. Rood, of Washburn, I. C. McNeill, of West Superior, and Rev. S. H. Murphy, of Phillips, Rev. S. E. Lathrop, Field Superintendent. The headquarters of this vigorous association, which is doing great good, and the homes of its officers are in the Vaughn Library at Ashland. Its success is largely due to the intelligent work of its secretary, Miss Green, who is zealous and untiring in her work, and to the Field Superintendent, Mr. Lathrop, the veteran library missionary.

INSTITUTES FOR LIBRARIANS.

October 1 and 2, 1898, an institute for the librarians of the J. D. Witter Traveling Libraries, of Wood County, was held in Grand Rapids. The speakers included Mrs. C. S. Morris, of Berlin, J. D. Witter, G. L. Williams and Prof. G. S. Ford, of Grand Rapids, County Superintendent Havenor, of Centralia, Miss M. E. Tanner, of Stevens Point, Miss L. E. Stearns, of Milwaukee, and F. A. Hutchins, of Madison. Three of the librarians of Mr. Witter's libraries read very interesting and practical papers, as follows: H. E. Miller, Dexterville, "The public school and the traveling library;" Rev. A. L. McClelland, Nekoosa, "How to get the boys to read," and Mrs. Sarah Elliott, Saratoga, "How to get the girls to read."

Two institutes for the librarians in Dunn County have been held—one in November, 1896, and one in November, 1897. Both of these institutes were attended by quite a number of librarians from beyond the borders of Dunn County. Miss Gratia Countryman, of Minneapolis, attended the latter meeting and wrote an account of it for the *Library Journal* of December, 1897, which is reprinted below:

"One of the most inspiring library meetings yet held in Wisconsin, and one which gave the greatest promise of future good, was held in Menomonie Nov. 6. This meeting was the second institute of the librarians of the Stout Free Traveling Libraries, and was held in the beautiful club-rooms of the Menomonie Library. The design of the meeting was to bring together the people who have charge of the traveling libraries in each district, for the purpose of increasing their interest and encouraging their work.

These amateur librarians are farmers and farmers' wives, village postmasters and country school-teachers who assume the responsibility and take charge of the circulation of the traveling library. Their library services are gratuitous, and necessarily subordinate to other duties, so that one could scarcely have expected many of them to be present at such a meeting and to devote a whole day to the consideration of library and educational work. But in spite of the fact that their labor is gratuitous, perhaps because of it, they have not escaped the enthusiasm which library work ought to inspire—an enthusiasm which, in this case, brought them in over rough roads from distances of from 10 to 40 miles. There were 50 or 60 people present, representing at least 20 different communities of the county, and it meant sincere appreciation of their opportunity, and an eager desire

to make the most of it, that this class of people could have been brought together for such a purpose from such a distance.

The officers of the Wisconsin Free Library Commission were in charge of the meeting and made the people feel the importance of the work they were doing, gave them suggestions for making the books still more helpful, and told them how to form study clubs and home circles.

All of the speeches during the day were on practical topics, on work that has been or is going to be accomplished.

A paper on "Traveling pictures" was very interesting, and was made even more so by the fact that Senator Stout had purchased 800 beautiful pictures, original photographs of masterpieces, and intends circulating them throughout the county on the traveling library plan. All of these pictures have been framed and will be hung in the school-rooms, and in addition each school-house will have, as a permanent loan, a fine large picture of Lincoln.

Senator Stout has put into circulation about 35 traveling libraries, and it was reported that the circulation of 15 of them had reached 5588 v. during the past year, and this among scattered families. Figures, perhaps, do not express the value of a cause, but these figures, together with the true altruistic zeal displayed at that meeting, do prove beyond doubt the value of Senator Stout's benevolence. No librarian ever doubted it, but legislators sometimes have.

Wisconsin has already earned a national reputation in library work, but no one can appreciate the real pioneer work which is being done there until they see it face to face."

PROCEEDINGS OF THE WISCONSIN FREE LIBRARY COMMISSION.

Madison, Wis., April 24, 1897.

Upon call of the secretary, the Commission met at the office of the secretary of the State Historical Society at 4 P. M. this day.

In the absence of the chairman the meeting was called to order by Commissioner Thwaites who stated that Commissioner Hutchins having resigned Hon. J. H. Stout, of Menomonie, had been appointed by the governor as his successor. The commission of Mr. Stout was duly produced and placed on file, and he took his seat and was chosen chairman pro tem. of the meeting. Commissioner Thwaites was chosen secretary pro tem. in the absence of the secretary.

The roll was called and the following responded to their names:

Commissioners Emery, Stout, and Thwaites—3.

Absent—Commissioners Adams and Stearns—2.

On motion the commission proceeded to ballot for permanent chairman to fill vacancy. Commissioner Stout received a majority of the ballots cast and was declared duly elected chairman.

On motion the commission proceeded to the election of a secretary. Mr. Hutchins received all the votes cast and was declared duly elected.

At this juncture it was reported to the commission that Miss Stearns had sent to the governor her resignation as a commissioner, whereupon she was, on motion of Com. Thwaites, elected librarian of the commission.

On motion of Commissioner Emery the meeting then adjourned, subject to the call of the chairman.

REUBEN G. THWAITES,
Secretary pro tem.

Madison, Wis., April 27, 1897.

The Commissioners met in the office of the secretary of the State Historical Society at 2 P. M. on the above date, on the call of the chairman. Present, Chairman Stout and Commissioners Thwaites, Adams and Emery.

Com. Thwaites moved that the secretary be paid \$1,500 per annum and necessary traveling expenses. The motion was carried.

Com. Thwaites moved that the librarian be paid \$1,200 per annum and necessary traveling expenses, and that her duties should include the work of assisting in the establishment, the organizing and improving of the free public libraries of the state. The motion was carried.

Com. Thwaites moved that until the annual meeting of the commission that the secretary be authorized to employ any necessary clerical assistance. The motion was carried.

Com. Adams stated that it had been decided to hold a session of the Summer School of the University of Wisconsin during the summer of 1897. He also stated that there was an unexpended balance of about \$200.00 to the credit of the department of library science of that school; that this balance in addition to the fees for tuition which would

be paid by the pupils, would probably be sufficient to defray the expenses of holding a session of the department of library science in the summer of 1897. Upon motion of Com. Thwaites it was voted that the Commission would assume the responsibility for any deficit, not exceeding \$100.00, that might be caused by holding a third session of the Summer School of Library Science.

The Commission then adjourned.

F. A. HUTCHINS,
Secretary.

Madison, June 8, 1897.

The annual meeting of the Commission was held in its room in the capitol on the above date.

Present, Chairman Stout and Commissioners Adams and Morris. The minutes of the previous meeting were read and approved.

Com. Adams moved that Com. Stout be elected chairman of the Commission for the ensuing year. The motion was put to a vote by the secretary and was carried.

Com. Adams moved that the secretary be instructed to enter the gross amount of each voucher for the expenditures of the Commission and to refer to each voucher by number in such a manner as to make it possible easily to ascertain and verify the various items going to make up the gross amount of the expenditures. The motion was carried.

Com. Adams moved that the secretary be authorized to employ Mrs. S. H. Miner, or some other stenographer, for one week to assist in the preparation of a handbook for distribution by the Commission, and that hereafter he be authorized to employ a stenographer by the hour to an amount not exceeding two hours per day. The motion was carried.

Upon motion of Com. Morris the secretary and librarian were authorized to subscribe for 500 clippings upon state library news, from the Newspaper Clipping Bureau.

Upon motion of Com. Morris the secretary and librarian were authorized to invite the American Library Association to hold its annual meeting in 1900 in Wisconsin.

Upon motion of Com. Morris the Commission then adjourned.

F. A. HUTCHINS,
secretary.

Madison, Wis., June 9, 1898.

A special meeting of the Commission, called by Chairman Stout, was held in the capitol building on the above date. Present, Com's Stout, Morris, Adams, Thwaites.

Upon motion of Com. Morris Chairman Stout was authorized to invite the American Library Association to hold its Annual Conference in Wisconsin in 1900.

Com. Thwaites moved that the rules be suspended and that the present meeting be considered the annual meeting of the Commission instead of that provided for the 14th inst. The motion was carried by a unanimous vote.

Com. Morris moved that Com. Stout be re-elected chairman of the Commission for the ensuing year. Com. Thwaites put the motion to vote and it was carried.

Upon motion of Com. Adams the meeting adjourned.

F. A. HUTCHINS,
Secretary.

EXPENDITURES OF WISCONSIN FREE LIBRARY
COMMISSION FOR BIENNIAL PERIOD END-
ING OCTOBER 1, 1898.

ORDERS DRAWN.

1896-7.

Nov. 2.	Marr & Richards—half-tones.....	\$9 40
Nov. 17.	L. E. Stearns—trav. exp... ..	29 75
Nov. 21.	R. G. Thwaites—trav. exp.....	14 15
Dec. 9.	Riverside Printing Co.—printing.....	34 10
Dec. 9.	L. E. Stearns—supplies.....	22 85
Dec. 10.	F. A. Hutchins—trav. exp.....	15 05
Dec. 22.	E. H. Blair—clerical service.....	6 80
Dec. 28.	Riverside Printing Co.—printing and postage.....	140 50
Dec. 30.	Adelaide Blend—clerical service.....	21 00
Dec. 30.	Riverside Printing Co.—printing.....	43 75
Dec. 30.	H. H. West Co.—supplies.. ..	20 00
Dec. 30.	Democrat Printing Co.—printing.....	55 00

1897.

Jan. 5.	F. A. Hutchins—trav. exp.....	20 80
Jan. 8.	L. E. Stearns—trav. exp.....	11 38
Jan. 11.	L. Northrup—stenographer	15 00
Jan. 13.	F. A. Hutchins—trav. exp.....	45 68
Jan. 21.	C. M. Berryman—proof-reading	4 00
Feb. 8.	Wyckoff, Seaman & Benedict—rent of type-writer	10 00
Feb. 11.	L. E. Stearns—trav. exp.....	8 60
Feb. 17.	Carson-Harper Co.—Library Handbooks.....	18 00
Feb. 18.	F. A. Hutchins—trav. exp.....	28 71
Mch. 2.	R. G. Thwaites..trav. exp.....	7 26
Apr. 14.	F. A. Hutchins—trav. exp.....	8 97
May 5.	Riverside Printing Co.—printing.....	63 75
May 6.	F. A. Hutchins—cash for office supplies.....	20 98
May 6.	F. A. Hutchins—trav. exp.....	31 79
May 28.	F. A. Hutchins—trav. exp.....	130 32
June 10.	F. A. Hutchins—trav. exp.....	29 50
June 10.	F. A. Hutchins—cash for supplies.....	2 00
June 10.	F. A. Hutchins—salary from April 24 to June 1st..	150 00
June 10.	L. E. Stearns—trav. exp.....	21 21
June 16.	Mrs. S. H. Miner—clerical service.....	7 20
June 16.	Wis. Journal of Ed.—400 copies.....	16 00
June 16.	J. H. Stout—trav. exp.....	15 56
June 30.	S. H. Miner—for Library Journal	5 00
July 2.	J. W. White—photos trav. lib's.....	19 50
July 13.	L. E. Stearns—salary, June.....	100 00

EXPENDITURES OF THE COMMISSION.

39

July 13.	F. A. Hutchins—salary June	125 00
July 13.	Mrs. S. H. Miner—clerical service.....	20 00
July 14.	H. Larson—photo cases.....	10 90
July 27.	L. E. Stearns—trav. exp.....	133 20
July 31.	Mrs. S. H. Miner—clerical service.....	25 00
July 31.	F. A. Hutchins—salary, July.....	125 00
July 31.	F. A. Hutchins—trav. exp.....	27 70
July 31.	L. E. Stearns—salary, July.....	100 00
Aug. 24.	E. A. Tucker—photographs.....	25 75
Aug. 24.	Library bureau—office supplies.....	18 25
Aug. 24.	L. E. Stearns—trav. exp.....	18 15
Aug. 24.	F. A. Hutchins—trav. exp.....	68 03
Sept. 1.	L. E. Stearns—salary, August.....	100 00
Sept. 1.	Mrs. S. H. Miner—clerical service.....	28 00
Sept. 1.	F. A. Hutchins—salary, August.....	125 00
Sept. 10.	C. R. Monroe—photographs.....	4 00
Sept. 24.	Riverside Printing Co.—printing.....	7 50
Sept. 24.	L. E. Stearns—trav. exp.....	23 42
Sept. 24.	F. A. Hutchins—trav. exp.....	26 75
Total.....		\$2,215 21

1897-8.

Oct. 6.	F. A. Hutchins—salary, Sept.....	\$125 00
Oct. 6.	L. E. Stearns—salary, Sept.....	100 00
Oct. 6.	Mrs. S. H. Miner—clerical service.....	6 00
Oct. 6.	R. G. Thwaites—cash for supplies.....	2 10
Oct. 19.	F. C. Lau—stereopticon slides.....	27 50
Oct. 25.	F. A. Hutchins—trav. exp.....	70 65
Oct. 25.	L. E. Stearns—trav. exp.....	24 68
Oct. 25.	Mrs. S. H. Miner—clerical service.....	18 00
Nov. 2.	F. A. Hutchins—salary, Oct.....	125 00
Nov. 2.	L. E. Stearns—salary, Oct.....	100 00
Nov. 2.	L. E. Stearns—trav. exp.....	63 45
Dec. 1.	L. E. Stearns—salary, Nov.....	100 00
Dec. 1.	F. A. Hutchins—salary, Nov.....	125 00
Dec. 14.	F. Q. Norton—clerical service	12 90
Dec. 14.	H. C. Gerling—drayage.....	3 95
Dec. 23.	Mary A. Powell—clerical service.....	20 50
Dec. 27.	M. L. Snyder—clerical service.....	12 58
Dec. 27.	J. W. White—photographs.....	33 80
Dec. 31.	L. E. Stearns—salary, Dec.....	100 00
Dec. 31.	L. E. Stearns—trav. exp.....	42 06
Jan. 4.	Mrs. C. S. Morris—trav. exp.....	20 19

Jan. 4.	F. A. Hutchins—trav. exp.....	76 75
Jan. 4.	F. A. Hutchins—salary, Dec.....	125 00
Jan. 4.	E. F. Tucker—photographs.....	5 05
Jan. 4.	L. M. Curtiss—clerical service.....	8 50
Jan. 31.	F. A. Hutchins—salary, Jan.....	125 00
Jan. 31.	L. M. Curtiss—clerical service.....	15 00
Jan. 31.	Publishers' Weekly—copies Library Journal.....	12 00
Jan. 31.	L. E. Stearns—salary, Jan.....	100 00
Feb. 17.	H. C. Gerling—drayage.....	5 90
Feb. 17.	Tracy, Gibbs & Co.—printing.....	6 00
Feb. 17.	R. G. Thwaites—trav. exp.....	8 65
Feb. 17.	L. E. Stearns—trav. exp.....	66 20
Mch. 2.	L. M. Curtiss—clerical service.....	15 00
Mch. 2.	F. A. Hutchins—salary, Feb.....	125 00
Mch. 2.	L. E. Stearns—salary, Feb.....	100 00
Mch. 8.	F. A. Hutchins—trav. exp.....	90 95
Mch. 14.	H. C. Gerling—drayage.....	6 00
Mch. 18.	Library bureau—office supplies.....	6 00
Mch. 18.	F. C. Lau—stereopticon slides.....	4 50
Mch. 28.	F. Q. Norton—clerical service.....	5 50
Mch. 28.	F. A. Hutchins—March salary.....	125 00
Mch. 28.	Miss E. F. Corwin—clerical service.....	28 09
Mch. 28.	L. E. Stearns—March salary.....	100 00
Mch. 28.	L. M. Curtiss—clerical service.....	15 00
Apr. 29.	L. E. Stearns—April salary.....	100 00
Apr. 29.	L. E. Stearns—trav. exp.....	92 20
Apr. 29.	Stella Lucas—clerical service.....	3 36
Apr. 29.	F. A. Hutchins—April salary.....	125 00
Apr. 29.	L. M. Curtiss—clerical service.....	15 00
May 18.	H. C. Gerling—drayage.....	8 10
May 18.	F. A. Hutchins—trav. exp.....	43 21
May 31.	F. A. Hutchins—May salary.....	125 00
May 31.	L. E. Stearns—May salary.....	100 00
May 31.	L. M. Curtiss—clerical service.....	15 00
June 21.	L. E. Stearns—trav. exp.....	25 07
June 21.	Democrat Printing Co.—binding	11 95
June 21.	Riverside Printing Co.—printing	7 00
June 21.	Ella Stiehl—clerical service.....	11 40
June 21.	A. E. Braley—clerical work.....	19 00
June 21.	A. A. Bish—photographs.....	3 60
June 27.	L. E. Stearns—salary, June.....	100 00
June 27.	L. M. Curtiss—clerical service.....	20 00
June 27.	Schwaab Stamp & Seal Co.—supplies.....	7 59
June 27.	E. F. Tucker—photographs.....	9 40

EXPENDITURES OF THE COMMISSION.

41

June 27.	F. A. Hutchins—June salary.....	125 00
July 26.	H. C. Gerling—drayage.....	12 00
Aug. 1.	L. E. Stearns—salary, July.....	100 00
Aug. 1.	A. E. Braley—clerical service.....	5 00
Aug. 1.	L. M. Curtiss—clerical service.....	20 00
Aug. 20.	F. A. Hutchins—cash for office supplies.....	21 54
Aug. 20.	F. A. Hutchins—salary, July.....	125 00
Aug. 24.	Democrat Printing Co.—binding.....	11 55
Aug. 24.	Grimm & Son—binding.....	11 00
Aug. 26.	F. A. Hutchins—salary, August.....	125 00
Aug. 26.	L. M. Curtiss—clerical service.....	20 00
Aug. 26.	L. E. Stearns—salary, August.....	100 00
Sept. 6.	Clark Engraving Co.—half-tones.....	21 00
Sept. 8.	L. E. Stearns—trav. exp.....	68 46
Sept. 8.	F. A. Hutchins—trav. exp.....	38 24

 \$3,954 12

FREE LIBRARIES SUPPORTED BY MUNICIPAL TAXATION.

TOWN.	Popu- lation 1895.	Libra- ry es- tab- lished.	City con- trol.	Tax 1897.	Endow- ment fund.	Other gifts in 1897.	No. of volumes.	Circula- tion 1897.
Appleton.....	14,641	1897	1897	\$2,100		\$819	3,300	
Baraboo.....	5,484	1897	1897	1,177		12	1,489	
Bayfield.....	1,368			1,000			1,450	6,831
Beaver Dam ¹	5,042	1884	1885	1,098	\$15,000		7,075	24,489
Belleville.....	400	1857	1893	121			1,728	3,687
Beloit.....	7,786		1895	2,200			5,000	32,000
Black River Falls.....	4,279	1868	1876	175			1,750	3,000
Chippewa Falls.....	9,196		1874	1,000		241	3,889	23,499
Cumberland.....	1,426		1898	52		5	241	
De Pere.....	4,292	1875	1896	510			2,000	
Durand.....	1,372		1898			600	600	
Eau Claire.....	18,637		1876	3,000		340	8,091	49,922
Fond du Lac.....	13,051		1877	2,500			16,200	40,000
Fort Atkinson.....	2,815	1892	1893	400		415	1,742	8,844
Grand Rapids ²	2,013	1890	1890		10,000		3,810	13,801
Green Bay ³	18,290		1889	1,600	15,000		5,700	46,415
Hartland.....	657		1897	100		245	444	
Hayward.....	3,741		1887	600			2,280	6,000
Hillsboro.....	593		1898					
Janesville.....	12,971		1884	3,000			12,000	39,471
Kilbourn.....	1,207	1887	1898				351	
La Crosse.....	28,769	1888		1,500	50,000		14,137	43,400
Madison.....	15,950	1853	1875	3,000			15,700	70,975
Marinette.....	15,286		1878	500			3,000	15,000
Menasha.....	6,154	1896	1897	1,200	10,000	20,000	1,708	11,459
Menomonie.....	6,198	1876	1888	1,000			2,996	7,000
Merrill ⁴	8,607	1891	1891		10,000		4,650	19,020
Milwaukee.....	249,290	1847	1878	46,000		16,100	103,393	416,863
Neenah.....	5,781	1882	1884	904			6,750	21,832
Neillsville.....	2,206	1895	1897	482			1,150	10,920
North Milwaukee.....			1898					
Oshkosh.....	26,947		1895	2,000		155,000	5,067	55,640
Racine.....	24,889		1896	2,489		5,200	4,850	
Rhineland.....	4,330		1898	300		40	650	
Rice Lake.....	3,162	1897	1898	376		125	886	9,900
Richland Center.....	2,041		1898			1,200		
Sheboygan.....	21,130		1897	1,316		1,474	2,935	22,281
Sparta.....	3,511	1861	1874	320			3,400	6,000
Spring Green.....	625		1897	135		50	600	3,000
Stevens Point.....	8,995	1897	1897	750		724	2,400	
Superior.....	26,168		1889	3,000			11,675	39,774
Thorp.....	829		1898	85			115	
Two Rivers ⁵	3,593	1891	1893	500		75	2,000	6,481
Viroqua.....	1,630		1868				600	
Washburn.....	5,173	1885	1891	1,500			1,300	6,000
Wausau.....	11,018	1897	1897	500		400	2,000	
Wauwatosa ⁶	2,755	1886	1898	600			2,700	8,600

¹ Williams Free. ² T. B. Scott Free. ³ Kellogg Public.⁴ T. B. Scott Free. ⁵ Joseph Mann Public. ⁶ Harwood Public.

FREE LIBRARIES SUPPORTED BY MUNICIPAL TAXATION—
Continued.

Town.	Location of library.	Days open each week.	Hours each day.	Reading room?	Open Sundays?	Spent in 1897 for books.
Appleton.....	Council rooms...	6	12½	Yes.....	Yes.....	.....
Baraboo.....	City hall.....	3	6	No.....	.....	\$268
Bayfield.....	Town hall.....	7	8	Yes.....	Yes.....	250
Beaver Dam.....	Building.....	7	7	Yes.....	Yes.....	425
Belleville.....	Village hall.....	1	7½	Yes.....	No.....	100
Beloit.....	Block.....	6	5½	No.....	.....	1,500
Black River Falls.....	City hall.....	6	5	Yes.....	No.....	75
Chippewa Falls.....	Block.....	6	6	Yes.....	No.....	.....
Cumberland.....	City hall.....	1	12	No.....	No.....	.....
De Pere.....	City hall.....	3	4½	No.....	.....	335
Durand.....	Drug store.....	2	5	No.....	.....	.....
Eau Claire.....	Block.....	6	8	Yes.....	No.....	911
Fond du Lac.....	Block.....	6	11	Yes.....	No.....	600
Fort Atkinson.....	Council room.....	3	6	Yes.....	No.....	150
Grand Rapids.....	City hall.....	4	8	Yes.....	No.....	500
Green Bay.....	Block.....	6	7	Yes.....	No.....	1,200
Hartland.....	Office.....	6	8	No.....	.....	.....
Hayward.....	City hall.....	7	7	Yes.....	Yes.....	200
Janesville.....	Block.....	6	7½	Yes.....	No.....	1,100
Kilbourn.....	City hall.....	1	9½	No.....	.....	.....
La Crosse.....	Building.....	6	6	Yes.....	No.....	.....
Madison.....	City hall.....	7	9½	Yes.....	Yes.....	585
Marinette.....	Block.....	7	5	Yes.....	Yes.....	.....
Menasha.....	Building.....	2	7	Yes.....	.....	.....
Menomonie.....	Block.....	7	4½	Yes.....	Yes.....	300
Merrill.....	City hall.....	7	6½	Yes.....	Yes.....	.....
Milwaukee.....	Building.....	7	13	Yes.....	Yes.....	6,737
Neenah.....	City hall.....	2	7	No.....	.....	550
Neillsville.....	City hall.....	3	3½	No.....	.....	400
Oshkosh.....	City hall.....	6	7	Yes.....	No.....	900
Racine.....	Block.....	7	7	Yes.....	Yes.....	.....
Rhineland.....	Block.....	3	5	No.....	.....	.....
Rice Lake.....	High school.....	2	5	Yes.....	No.....	325
Richland Center.....	Block.....	7	7	Yes.....	Yes.....	1,334
Sheboygan.....	Block.....	3	3	No.....	.....	.....
Sparta.....	Block.....	3	7	No.....	.....	.....
Spring Green.....	City hall.....	2	5	Yes.....	No.....	85
Stevens Point.....	Block.....	6	6	No.....	.....	1,005
Superior.....	Block.....	7	7	Yes.....	Yes.....	.....
Thorp.....	Office.....	2	5	No.....	.....	50
Two Rivers.....	Building.....	7	5½	Yes.....	Yes.....	250
Viroqua.....	Block.....	6	6	Yes.....	No.....	.....
Washburn.....	Building.....	7	11	Yes.....	Yes.....	.....
Wausau.....	Court house.....	5	7	Yes.....	No.....	671
Wauwatosa.....	Building.....	4	5½	Yes.....	No.....	200

FREE LIBRARIES SUPPORTED BY MUNICIPAL TAXATION—
Continued.

TOWN.	Spent in 1897 for reading room.	Card catalog?	Two-book system?	Age limit?	Open shelves?	Librarian.
Appleton		Yes	Yes	No	Yes	Miss Agnes L. Dwight.
Baraboo		No	No	10	Yes	Miss Kate M. Potter.
Bayfield		No	No	No	No	Jeremiah Andreas.
Beaver Dam	\$64	Yes	Yes	Yes	Yes	Miss Hattie A. Doolittle.
Belleville	Donated.	Yes	No	No	No	Mrs. Jane Morse.
Beloit		Yes	Yes	No	Yes	Mrs. Nina Northrop.
Black Riv. Falls		No	No	Yes	Yes	Mrs. Mary J. Gunn.
Chippewa Falls		Yes	Yes	No	Yes	Miss Maud A. Earley.
Cumberland		No	No	No	No	Mrs. Laura Urquhart.
De Pere		Yes	Yes	Yes	Yes	Miss Elizabeth Smith.
Durand					No	Dr. Hutchison.
Eau Claire	238	Yes	No	No	Yes	Miss Ellen D. Biscoe.
Fond du Lac	141	Yes	Yes	Yes	No	Miss Emmr E. Rose.
Fort Atkinson	28		Yes	No	Yes	Miss Sue C. Nichols.
Grand Rapids	75	No	No	8	Yes	Mrs. W. B. Raymond.
Green Bay	66	Yes	Yes	No	No	Miss Anna H. McDonnell.
Hartland		Yes	No	No	Yes	G. F. Ramsey.
Hayward	100	No	No	No	No	Miss Christine Nelson.
Janesville	100	No	Yes	Yes	No	Mrs. Louise S. Best.
Kilbourn		No	No	No	Yes	Miss Lillian F. Ramsey.
La Crosse	60	No	No	14	No	Miss Annie Hanscome.
Madison	161	Yes	Yes	Yes	Yes	Miss Georgia R. Hough.
Marinette		Yes	No	10	No	Mrs. Alice G. Sceney.
Menasha		No	No	No	Yes	Miss Lucy L. Pleasants.
Menomonie		Yes	Yes	7	Yes	Miss Margaret A. Heller.
Merrill	65	Yes	No	Yes	No	Miss Janet P. Russell.
Milwaukee	1,207	Yes	Yes	No	No	Geo. W. Peckham.
Neenah		No	No	No	No	Miss Emma F. Lachman.
Neillsville		Yes	No	No	No	Miss Laura Glass.
Oshkosh	71	No	Yes	Yes	No	Miss Mary A. Olcott.
Racine	125	No	Yes	No	Yes	Miss Mary J. Calkins.
Rhineland		No	Yes	No	Yes	Miss Inez Van Tassel.
Rice Lake	50	Yes		11	Yes	Miss Mabel C. Hoag.
Richland Center						Mrs. Gertrude Stewart.
Sheboygan	75	Yes	No	No	Yes	Miss K. Buchanan.
Sparta		No	No	No	No	Miss Jennie Scouten.
Spring Green	30	No	Yes	No	Yes	Miss Celia Hurley.
Stevens Point		Yes	No	No	Yes	Miss Mollie L. Catlin.
Superior	170	Yes	No	No	Yes	Mrs. Lydia E. Kimball.
Thorp		No	No	10	Yes	Wm. Wagner.
Two Rivers	43	Yes	Yes	10	Yes	Miss Mabel D. Campbell.
Viroqua		No	Yes	No	No	Wm. Haughton.
Washburn		No	No	14	No	Miss Ruth L. Gifford.
Wausau	10	Yes	No	10	Yes	Miss N. C. Silverthorn.
Wauwatosa	75	Yes	Yes	No	Yes	Mrs. Agnes B. Roddis.

FREE LIBRARIES SUPPORTED FROM SCHOOL FUNDS.

Town.	Popula- tion, 1895.	Library estab- lished.	In- come	No. of volumes.	Circu- lation.	Location of library	Days open each week.
Berlin	4,118	.....	\$350	1,700	7,945	Store	6
Brodhead	1,717	1889	.....	780	.....	Store	2
Edgerton	1,972	.....	100	1,500	.....	Block	2
Monroe	3,843	1876	800	3,600	15,674	Building..	7

Town.	Hours. each day.	Reading room?	Card catalog?	2-book system?	Age limit?	Open shelves?	Librarian.
Berlin	13½	No	Yes	No	No	Yes	Lewis M. Kraege.
Brodhead	2	No	No	No	No	No	Mrs. E. C. Randall.
Edgerton	6	Yes	No	No	No	Yes	Mrs. Croft.
Monroe	4	Yes	Yes	Yes	No	Yes	Kittie A. Smock.

FREE LIBRARIES SUPPORTED WHOLLY BY INDIVIDUALS.

Name of Library.	Donor.	Town.	Popu- lation.	Li- brary estab- lished.	Endow- ment.	In- come.
Vaughn Public ¹ .	Mrs. E. E. Vaughn	Ashland	12,310	1887	50,000	3,800
Jos. Dessert Free	Jcs. Dessert	Mosinee .....	.....	1898	.....	.....
Memorial Free ² .	Andrew Tainter ..	Menomonie	6,198	1890	.....	.....
Tomahawk Free ⁴ .	W. H. Bradley	Tomahawk	2,296	1897	.....	.....

Name of Library.	No of vol- umes.	Circu- lation.	Location of library.	Days open each week.	Hours each day.	Reading room?	Open Sundays?
Vaughn Public...	4,500	25,000	Business block...	7	12	Yes	Yes. ...
Jos. Dessert Free.	2	.....	Building .....	.....	.....	.....	.....
Memorial Free...	6,167	25,103	Building	7	12	Yes	Yes.
Tomahawk Free	300	.....	Store	6	14	.....	.....

Name of Library.	Spent in 1897 for books.	On read- ing room	Card cata- log?	Two book sys- tem?	Age limit?	Open Sundays?	Librarian.
Vaughn Public.	.....	.....	Yes	Yes	10	No	Miss Janet M. Green.
Memorial Free ..	600	130	Yes	Yes	No	Yes	Miss Stella Lucas.
Tomahawk Free	.....	.....	Yes	No	No	No	J. Clarence Webster.

¹ Free to all residents of Ashland county.² Free to all residents of Mosinee and vicinity.³ Free to all residents of Dunn county.⁴ Free to all residents of Tomahawk and vicinity.

FREE ASSOCIATION LIBRARIES

Association or Library.	Town.	Popula- tion, 1895.	Library estab- lished.	By whom maintained.	Number of volumes.	Circula- tion 1897.
W. A. Scott	Altoona	767	1891	Ladies' Auxiliary of Brother- hood Locomotive Engineers	409	.....
Free	Antigo	5,002	.....	W. C. T. U.	450	.....
Free	Blue Mounds	187	1889	Association	425	.....
Ashford and Auburn Union Free.....	Campbellsport.....	.....	1890	Association	175	150
Congregational Y. P. S. C. E.....	Clintonville.....	1,521	1890	Y. P. S. C. E.	572	3,500
Free	Deerfield	519	1898	Association	100	.....
Public	Eagle River.....	1,454	1892	Pastor of church	170	.....
Public	Evansville	1,716	.....	W. C. T. U.	625	2,000
Public	Kenosha	8,122	1896	Association	3,322	24,161
Public	Lake Geneva	2,452	1896	Association	588	2,707
Free Public.....	Mineral Point.....	3,136	1893	Woman's Club.....	2,412	.....
Public *.....	New London.	2,494	1894	Association.....	1,250	3,500
Public	Oconomowoc	3,178	1893	Association.....	2,550	1,100
Free Parish.....	Phillips.....	1,652	1895	Church	500	.....
Free	Token Creek.....	.....	1891	Woman's Club.....	175	.....

* City furnishes room, heat and light.

FREE ASSOCIATION LIBRARIES — Continued.

Association or Library.	Town.	Reading room?	Open shelves?	2-book system?	Location of library?	Librarian.
W. A. Scott	Altoona	Yes.....	No.....	No	Depot.....	Miss Kate Farrell.
Free.....	Antigo .....	.....	Yes..	No.....	City Hall	Mrs. Mary R. Brush.
Free.....	Blue Mounds .....	.....	Yes.....	No.....	Store.....	F. M. Roberts.
Ashford and Auburn Union Free	Campbellsport.....	.....	Yes.....	No.....	Residence.....	Mrs. John Loeb.
Congregational Y. P. S. C. E.....	Clintonville.....	No.....	Yes.....	No.....	Store.....	F. A. Sedgwick.
Free.....	Deerfield.....	No.....	.....	No.....	Store.....	.....
Public.....	Eagle River.....	Yes.....	Yes.....	No.....	.....	Rev. H. C. Todd.
Public	Evansville	No.....	.....	No.....	Residence.....	Mrs. L. A. Wilder.
Public	Kenosha	No.....	Yes.....	Yes.....	Block	Mrs. C. P. Barnes.
Public	Lake Geneva	Yes.....	Yes.....	No.....	City Hall	Miss Florence M. Main.
Free Public.....	Mineral Point.....	No.....	No.....	No.....	Block	(Volunteer service.)
Public	New London.....	Yes.....	Yes.....	No.....	City Hall	E. C. Jost.
Public	Oconomowoc	Yes.....	No.....	No.....	Block	Miss Clara Weber.
Free Parish.....	Phillips	No.....	Yes.....	No.....	Church.....	William Grant.
Free.....	Token Creek.....	No.....	Yes.....	Yes.....	Residence.....	Miss Mary F. Connor.

FREE ASSOCIATION LIBRARIES.

SUBSCRIPTION LIBRARIES.

Name of library.	Town.	Popula- tion, 1895.	Library estab- lished.	Endow- ment?	Income, * Entertainments, etc.	Dues per year.	Per book.	Number of volumes.	Circula- tion, 1897.
Colby.....	Colby	513							
Columbus.....	Columbus.....	2,287		\$1,000		\$1.00		2,000	3,000
Ladies'.....	Dallas.....		1888				5 cts.	450	
Elkhart Lake.....	Elkhart Lake.....		1895			50		300	
Howard*.....	Gilmanton.....		1865	500				1,200	1,700
Circulating.....	Mauston.....	1,547	1898			3.00		300	
	New Richmond.....	1,680							
Circulating.....	Portage.....	5,419	1874					900	
Junction.....	Racine.....	24,889	1881				5 Cts.	1,388	600
Public †.....	Ripon.....	4,380	1885		\$260		5 Cts.	2,050	2,100
Public.....	Waukesha.....	7,222	1896		150	1.00		800	
Hillyer‡.....	Waupun.....	3,216	1858		212	2.00	5 Cts.	6,057	5,000
Whitehall.....	Whitehall.....	402	1882				5 Cts.	300	1,000
Public.....	Whitewater.....	3,709	1884	300	73.96	1.00		1,690	

*The privilege of reading certain books is auctioned off at quarterly meetings of the Association.

† Now supported by the city and free.

‡ City pays, rent, insurance and librarian's salary.

SUBSCRIPTION LIBRARIES — Continued.

Name of library.	Town.	Reading room?	Open shelves?	2-book system?	Location of library?	Days open per week.	Librarian.
Colby	Colby.....						
Columbus.....	Columbus.....		Yes.....	Yes.....	City Hall.....	1	Miss Libbie Quickenden.
Ladies'	Dallas.....	No.....			Residence.....	1 day a Mo.	Mrs. J. B. Patterson.
Elkhart Lake.....	Elkhart Lake.....	Yes.....	No.....		Store.....		P. B. Brueckbauer.
Howard*.....	Gilmanton.....	No.....			Union Church.....		Geo. Lees.
Circulating	Mauston.....	Yes.....	Yes.....	No.....	Block.....	6	Miss Ella C. Brunson.
.....	New Richmond.....						
Circulating	Portage.....	Yes.....				1	Miss Maria Austin.
unction.....	Racine.....	No.....	Yes.....		S. S. Building	1	Miss Ella S. Phelps.
Public†.....	Ripon.....	Yes.....	Yes.....	Yes.....	City Hall.....	6	Miss Fannie P. Scribner.
Public.....	Waukesha.....	Yes.....	Yes.....	No.....	Block.....	3	Miss Fannie L. Ellis.
Hillyer‡.....	Waupun.....	No.....	Yes.....	Yes.....	Block.....	1	Mrs. Rose L. Stewart.
Whitehall.....	Whitehall.....	No.....	No.....	No.....	Office.....	6	Joseph B. Beach.
Public.....	Whitewater.....	No.....	Yes.....	No.....	Block.....	2	Miss Carrie W. Thayer.

*The privilege of reading certain books is auctioned off at quarterly meetings of the Association.

†Adopted by city and made free in September, 1898.

‡City pays rent, insurance and librarian's salary.

SUBSCRIPTION LIBRARIES.

PROPRIETARY LIBRARY.

Milwaukee Law Library.....	8,000 volumes.....	William W. Wight, Librarian.
----------------------------	--------------------	------------------------------

COLLEGE OR ACADEMY LIBRARIES.

Name of Institution.	City or village.	Number of volumes.	Librarian.
Lawrence University.....	Appleton.....	15,124	Miss Zelia A. Smith.
North Wisconsin Academy.....	Ashland.....	700	Theodore Lathrop.
Wayland Academy.....	Beaver Dam.....	1,200	Homer Vosburgh.
Beloit College.....	Beloit.....	24,000	Charles A. Bacon.
St. John's Military Academy..	Delafield.....	1,500	
Mission House.....	Herman.....	6,000	J. W. Grosshuesch.
Hillside Home.....	Hillside.....	2,500	
Milton College.....	Milton.....	5,300	Edwin Shaw.
Concordia College.....	Milwaukee.....	3,540	O. Hattstaedt.
German-English Academy.....	Milwaukee.....	1,243	
Marquette College.....	Milwaukee.....	10,000	Victor Putten.
Milwaukee Academy.....	Milwaukee.....	800	
National German-American Teachers' Seminary.....	Milwaukee.....	1,350	Max Griebisch.
St. Lawrence College.....	Mt. Calvary.....	2,000	B. Mueller.
Mt. Horeb Academy.....	Mt. Horeb.....	200	
Nashotah House.....	Nashotah.....	10,000	
Sacred Heart College.....	Prairie du Chien.....	6,000	P. Matthias.
Racine College.....	Racine.....	10,000	Arthur Piper.
Home School.....	Racine.....	4,000	
St. Catharine's Academy.....	Racine.....	3,025	
Ripon College.....	Ripon.....	10,000	C. D. Marsh.
Catholic Normal School and Pio Nono College.....	St. Francis.....	1,852	
St. Clara Female Academy.....	Sinsinawa.....	3,000	
Stoughton Academy.....	Stoughton.....	700	
Northwestern University.....	Watertown.....	620	
Sacred Heart College.....	Watertown.....	1,500	
Carroll College.....	Waukesha.....	1,000	M. E. James.

LIBRARIES SUPPORTED WHOLLY OR IN PART BY THE STATE.

Name of Library.	City.	No. of Volumes.	Librarian.
State (law)	Madison	31,251	John R. Berryman.
State Historical Society	Madison	100,980	Isaac S. Bradley.
State University	Madison	54,000	Walter M. Smith.
Academy of Sciences, Arts and Letters	Madison	18,000	Wm. S. Marshall.
Normal School—Milwaukee..	Milwaukee	4,500	Miss Anne H. McNeil.
Normal School—Oshkosh....	Oshkosh	5,356	Miss Adelaine Parsons.
Normal School—Platteville..	Platteville	5,600	Miss Bee A. Gardner.
Normal School—River Falls..	River Falls	9,000	Miss Lillian Currier.
Normal School—Stevens Pt..	Stevens Point..	5,000	Miss Elizabeth P. Simpson.
Normal School—Superior....	West Superior..	3,000	Miss Mary F. Carpenter.
Normal School—Whitewater.	Whitewater	4,450	Miss Elizabeth P. Swan.
Industrial School for Boys...	Waukesha	505	J. K. McGregor.
Industrial School for Girls...	Milwaukee	575	
Northern Hospital for the In- sane	Oshkosh	3,500	
State Hospital for the Insane.	Madison	3,000	
School for the Blind	Janesville	3,025	
School for the Deaf	Delavan	2,400	
State Prison	Waupun	1,150	
Veterans' Home	Waupaca	987	W. O. Fisher.
State Reformatory	Green Bay.....	.....	J. E. Heg.

STOUT TRAVELING LIBRARIES.

DUNN COUNTY.

37 libraries of 40 volumes each — 1480 volumes.

MISS STELLA LUCAS, Menomonie, Secretary.

NOTE.—This record shows the number of borrowers and the circulation of each library on its last trip and the place where it was stationed. The average length of time of a trip was seven months, the total circulation 6,346, indicating an annual circulation of more than 10,000.

Post Office.	Librarian.	Borrowers.	Circulation.
Amy	M. H. Knott	105	423
Boyceville	Mrs. Louella Bradway	25	212
Irvington	Fred M. Bird	16	56
Menomonie	Mrs. R. D. Givney	42	138
Cedar Falls	Mrs. E. C. Plemon	87	259
Colfax	N. A. Lee	77	243
Davis	Mrs. Lena Clack	40	214
Downing	E. F. Stoddard	25	472
Downsville	Mrs. H. T. Cassidy	60	306
Dunnville	Mrs. John Flick, Jr	46	115
Menomonie	Mrs. B. L. Warner	50	187
Eau Galle	Dr. P. H. Doughty	48	135
Menomonie	Austin K. Rollag	40	140
Elk Mound	A. B. Ausman	39	131
Fall City	Mrs. R. Vesper	53	219
Sand Creek	I. I. Priddy	39	206
Downing	Mrs. Frank Best		134
Knapp	W. H. Francis		256
Louisville	J. B. Steves	34	300
Elmwood, Pierce Co.	K. T. Thompson	34	215
Downing	Mabel T. Goff	40	158
Grant	Harvey W. Dodge	22	53
Durand, Pepin Co.	Mrs. Etta Hubbard	40	150
Rock Falls	J. H. Day	36	165
Sand Creek	F. B. Whicher	53	147
Prairie Farm	S. W. West		
Tonnar	Philip Holliday	44	188
Waneka	Mrs. E. C. Jacobs	20	89
Waubek	Mrs. S. S. McGilton	32	210
Weston	John Liddy	25	73
Wheeler	Frank Basner	24	189
Eau Galle	Miss E. M. Ingram	50	208
Stoops	Mrs. Ida Gerry	40	122
Colfax	L. O. Berg	44	282
Menomonie	Anna Larson	21	85

TRAVELING PICTURES.

The traveling pictures furnished by Senator Stout to the school districts in Duun County are in charge of Miss Brickley, County Superintendent of Schools, and are sent out from the Stout Manual Training School to about eighty districts, which have complied with the conditions necessary to secure them, viz., to clean and tint the walls of their school rooms. Five pictures are sent to districts in the order in which they are applied for, one of which, a large portrait of Lincoln, is retained permanently by each district. The other four are kept as long as is thought advisable and are then exchanged for another set of four.

J. D. WITTER TRAVELING LIBRARY ASSOCIATION.*

WOOD COUNTY.

32 libraries of 40 volumes each — 1,280 volumes.

Mrs. W. B. RAYMOND, Grand Rapids, Wis., librarian.

Association.	Librarian.	Post Office.
Arpin	M. Gaffney	Arpin.
Babcock	G. W. Lyon	Babcock.
Biron, town	Mrs. M. Vincent	Grand Rapids.
Biron, village	F. M. Stearns	Biron.
Blenker	J. A. Roy	Blenker.
Centralia	Mrs. E. Overbeck	Centralia.
Centralia, South	M. Ellison	Centralia.
Dexterville	A. Bullis	Dexterville.
Four Mile Creek	F. J. Herschleb	Grand Rapids.
Grant	F. H. Timm	Grand Rapids.
Junction City	A. C. Burns	Junction City.
Krusche	A. Krusche	Grand Rapids.
Ladies' Union	Mrs. H. Witter	Bakerville.
Lindsay	A. M. Blakely	Lindsay.
Longfellow	Mrs. K. Nutter	Saratoga.
Nekoosa (3 libraries)	Wm. Hooper	Nekoosa.
Petersen	C. L. Petersen	Milladore.
Pittsville (2 libraries)	C. Pelow	Pittsville.
Port Edwards	G. B. Brazeau	Port Edwards.
Potter	Mrs. M. H. Potter	Grand Rapids
Randolph and Sigel	Thos. Rezin	Rudolph.
School Dist. No. 2	L. C. Meacham	Pittsville.
Thankful	Mrs. Sarah Elliott	Saratoga.
Vesper	Mabel M. White	Vesper.

* 4 more libraries recently located.

SYSTEMS OF TRAVELING LIBRARIES IN WISCONSIN.

The following table shows the donors of the various systems of traveling libraries now in use in Wisconsin, the names of the secretaries in charge, their headquarters, the number in each system and the territory in which they travel. Documents, periodicals, books and catalogs for these libraries may be sent to the secretaries who will distribute them.

Donors.	Headquarters.	Secretaries.	No.	Territory.
Gifts.....	Wisconsin Free Library Commission, Madison.....	F. A. Hutchins	35	State.
J. H. Stout.....	Menomonie	Miss Stella Lucas.....	37	Dunn county.
J. D. Witter.....	Grand Rapids.....	Mrs. W. B. Raymond.....	32	Wood county.
W. H. Bradley.....	Tomahawk	W. H. Bradley.....	4	Lincoln county.
Gifts.....	Vaughn Library, Ashland.....	Miss Janet M. Green.....	25	North Wisconsin.
Woman's Club.....	Green Bay.....	Mrs. F. E. Teetshorn.....	9	Brown county.
Women's Clubs.....	Berlin.....	Mrs. C. S. Morris.....	5	Green Lake county.
Public Library.....	Chippewa Falls.....	Miss Maude A. Earley	4	Chippewa county.
Women's Clubs.....	Marinette.....	Mrs. I. Stephenson	9	Marinette county.
Woman's Ass'n.....	Wausau.....	J. F. Lamont.....	2	Marathon county.
Woman's Club.....	Stevens Point.....	.....	4	Portage county.
E. D. Smith.....	Menasha.....	Miss L. L. Pleasants.....	15	About Menasha.
Women's Clubs.....	La Crosse.....	Mrs. F. G. Tiffany.....	5	La Crosse county.
Total.....	.....	.....	186	.....





REPORT OF THE COMMITTEE

TO

Investigate the Railroad Companies

OF WISCONSIN.

PUBLISHED BY AUTHORITY.



MADISON, WIS.:
DEMOCRAT PRINTING COMPANY, STATE PRINTER
1898



REPORT OF COMMITTEE TO INVESTIGATE THE RAILROAD COMPANIES OF WISCONSIN.

To His Excellency Governor Edward Scofield:

Pursuant to chapter 350, laws of 1897, we the undersigned, the Attorney General, Secretary of State and Railroad Commissioner, beg leave to report the result of our investigation of the railroad companies of this state.

A reference in section 1 of chapter 350, laws of 1897, to the *Reports of Special Railroad Investigation Committee*, pages 983 to 1001 of the Assembly Journal of 1893, led us to believe that the investigation should include the companies' returns of state earnings, because, according to said report, such a marked difference exists between the gross earnings and the state earnings of the companies.

For the ten years ending December 31, 1892, the gross earnings of the Chicago, Milwaukee & St. Paul Railway Company were \$262,417,851.00, of which amount \$22,363,411.16 was not credited to any state.

The total gross earnings of the Minneapolis, St. Paul & Sault Ste. Marie road for the years 1890 and 1891 were \$4,600,191.00, and the earnings returned to the states during that period were \$4,060,717.00, leaving \$539,274.00 unaccounted for.

During the twelve years ending December 31, 1892, the gross earnings of the Chicago & Northwestern Railway Company amounted to \$313,539,238.11. The several states into which its road runs were credited with \$262,075,912.00 only, leaving \$51,463,326.11 earned somewhere on the lines of its road, but not credited anywhere.

This, in brief, is the statement of facts as found in the *Reports of Special Railroad Investigation Committee*, referred to above.

It seemed to us that the most simple way of getting at the facts would be to prepare a statement of the state earnings from the books of the companies. We acted accordingly.

The Chicago & Northwestern statement of state earnings, which we herewith submit, was compiled from the annual returns made by the freight and passenger auditors of freight and passenger earnings, to the general auditor, the latter furnishing the miscellaneous items.

C. & N. W. Ry.

	Miles.	Minority report.	"Add."	"Deduct."	Actual earnings.
1881.					
Wisconsin	895	\$4,960,461 00	\$ 67		\$4,930,461 67
Illinois	500	3,891,500 00	3,668,535 11		7,560,035 11
Michigan	222	2,476,310 00			2,476,310 04
Iowa	850	5,044,523 00	350,100 54		5,394,623 54
Minnesota	414	1,263,065 00		\$36 89	1,263,028 11
Dakota	335	194,714 00	38 25		194,752 25
		\$17,830,573 00	\$4,018,674 61	\$36 89	\$21,849,210 72
1882.					
Wisconsin	895	\$5,690,442 00	\$ 04		\$5,690,442 04
Illinois	500	3,451,500 00	4,158,118 80		7,609,618 80
Michigan	224	2,967,797 00	75		2,967,797 75
Iowa	913	5,671,262 00	52		5,671,262 52
Minnesota	414	1,627,574 00	01		1,627,574 01
Dakota	362	410,975 00	41		410,975 41
		\$19,819,550 00	\$4,158,120 53		\$23,977,670 53
1883.					
Wisconsin	902	\$5,804,635 00	\$ 96		\$5,804,635 96
Illinois	500	3,509,168 00	4,032,512 93		7,641,680 93
Michigan	307	2,938,778 00		574,383 06	2,264,394 34
Iowa	1,021	6,197,314 00	90		6,197,314 90
Minnesota	414	2,203,764 00		299 16	2,203,464 84
Dakota	438	912,574 00	83		912,574 83
		\$21,566,233 00	\$4,032,515 62	\$574,682 82	\$25,024,065 80
1884.					
Wisconsin	923	\$5,392,535 00	\$ 06		\$5,392,535 06
Illinois	510	3,351,003 00	4,149,481 25		7,500,484 25
Michigan	308	2,752,817 00		\$1,091,683 21	1,661,133 79
Iowa	1,048	6,019,217 00	39		6,019,217 09
Minnesota	414	1,984,871 00	09		1,984,871 39
Dakota	576	933,657 00	20		933,657 20
		\$20,434,100 00	\$4,149,481 99	\$1,091,683 21	\$23,401,898 78

C. & N. W. Ry.—continued.

	Miles.	Minority report.	"Add."	"Deduct "	Actual earnings.
1885.					
Wisconsin	920	\$5,548,853 00	\$ 93		\$5,548,853 93
Illinois	510	3,121,259 00	4,666,384 23		7,787,643 23
Michigan	308	2,564,166 00		\$1,128,068 35	1,436,097 65
Iowa	1,112	7,000,962 00		404,908 90	6,596,052 01
Minnesota	414	2,034,714 00	81		2,034,714 31
Dakota	576	857,696 00	40,000 53		897,696 53
		\$21,127,650 00	\$4,706,386 00	\$1,532,977 34	\$24,301,058 66
1886.					
Wisconsin	920	\$5,254,810 00	\$ 77		\$5,254,810 77
Illinois	587	3,628,247 00	4,279,790 56		7,908,037 56
Michigan	308	2,647,760 00		\$717,852 45	1,929,907 55
Iowa	1,112	7,594,130 00		416,022 49	7,178,107 51
Minnesota	414	1,877,791 00	205,371 23		2,083,162 23
Dakota	605	935,551 00	59,470 59		994,821 59
		\$21,938,089 00	\$4,544,633 15	\$1,133,874 94	\$25,343,847 21
1887.					
Wisconsin	940	\$5,737,690 00	\$ 80		\$5,737,690 80
Illinois	587	3,779,114 00	4,556,576 48		8,335,690 48
Michigan	309	2,810,837 00		\$243,645 23	2,567,191 77
Iowa	1,148	7,687,009 00		34	7,687,003 34
Minnesota	414	1,877,791 00		83	1,877,791 83
Dakota	700	935,351 00		02	935,351 02
		\$22,827,792 00	\$4,556,578 47	\$243,645 23	\$27,140,725 24
1888.					
Wisconsin	946	\$5,357,317 00	\$ 38		\$5,357,317 38
Illinois	586	3,561,708 00	4,593,426 27		8,155,134 27
Michigan	347	2,640,563 00		\$242,132 89	2,398,430 11
Iowa	1,163	7,309,405 00		17 70	7,309,387 30
Minnesota	414	1,710,174 00		54	1,710,174 54
Dakota	758	902,531 00		08	902,531 08
		\$21,481,638 00	\$4,593,427 27	\$242,150 59	\$22,832,974 68
1889.					
Wisconsin	946	\$5,562,851 00	\$ 13		\$5,562,851 13
Illinois	586	3,541,539 00	4,820,102 34		8,351,611 34
Michigan	381	2,987,651 00		\$183,055 93	2,797,595 07
Iowa	1,163	7,056,035 00		15	7,056,035 15
Minnesota	414	1,503,699 00		01	1,503,699 01
North Dakota	14		7,685 21		7,685 21
South Dakota	744	903,723 00		91	903,723 91
		\$21,545,548 00	\$4,827,708 75	\$188,055 93	\$26,185,280 82
1890.					
Wisconsin	946	\$6,269,488 00	\$ 69		\$6,269,488 69
Illinois	586	3,784,023 00	5,167,320 85		8,951,343 85
Michigan	382	3,361,268 00	253,870 13		3,615,138 13
Iowa	1,163	7,095,791 00		25	7,095,791 57
Minnesota	414	1,513,365 00		25	1,513,365 25
North Dakota	14	6,599 00		30	6,599 30
South Dakota	744	718,299 00		17	718,299 17
		\$22,748,833 00	\$5,421,192 96		\$28,170,025 96
1891.					
Wisconsin	946	\$6,759,183 00	\$ 44		\$6,759,183 44
Illinois	593	3,904,669 00	5,501,156 87		9,405,825 87
Michigan	382	3,002,798 00		28	3,002,798 28
Iowa	1,163	7,608,213 00		23	7,608,213 23
Minnesota	414	1,835,977 00		94	1,835,977 94
North Dakota	14	6,750 00		73	6,750 73
South Dakota	744	777,036 00		79	777,036 79
		\$23,894,631 00	5,501,160 28		\$29,395,791 28

C. & N. W. Ry.—continued.

	Miles.	Minority report.	" Add. "	" Deduct. "	Actual earnings.
1892.					
Wisconsin.....	946	\$7,212,273 00	\$ 25	.....	\$7,212,273 25
Illinois.....	593	4,457,100 00	6,000,170 67	.....	10,457,270 62
Michigan.....	382	3,522,451 00	87	.....	3,522,451 87
Iowa.....	1,163	8,467,570 00	87	.....	8,467,570 87
Minnesota.....	414	2,140,690 00	24	.....	2,140,690 24
North Dakota.....	14	7,270 00	45	.....	7,270 45
South Dakota.....	744	1,014,161 00	13	.....	1,014,161 13
		\$26,821,515 00	\$6,000,173 43	.....	\$32,821,688 43

The states traversed by the Chicago & Northwestern railroad are given in the first column. In the second column are given the number of miles operated in each state. The state earnings of the minority report are given in the third column. Under the headings of "Add" and "Deduct" the differences between the state earnings of the minority report and the actual state earnings are pointed out.

The Iowa state earnings for the years 1881, 1885 and 1886 and the Dakota earnings for 1885, as given in the minority report, we were unable to locate. Minnesota and Dakota are credited by the minority report with the same earnings in 1886 and 1887, which is due perhaps to a clerical error.

With these exceptions, the above statement shows that the only material difference between the state earnings, as given in the minority report and the actual state earnings, as given by us, is to be found in the earnings of the states of Illinois and Michigan. The differences in the Michigan earnings are due to the following peculiar provision of the Michigan law concerning the taxation of railroad earnings:

"When a railroad lies partly within and partly without the state, there shall be paid such portion of the tax herein imposed as the length of the operated road lying within this state bears to the whole length of the operated portion thereof."—No. 198, article III, section 3 of the Public Acts of Michigan of 1873.

As an illustration of the operation of this law, we give the report of the Chicago & Northwestern Railway Com-

pany, as found on page 59 of the report of the commissioners of railroads of Michigan for the year ending December 31, 1883:

"Proportion of income for Michigan (as given in answer to question 10, page 13) is obtained by proportion as follows:

Total average miles operated by Chicago & Northwestern Railway Company	3,641.62
Gross earnings from all miles operated.....	\$25,024,065.80
Miles operated in Michigan	307.49

which gives the proportion for Michigan, \$2,112,974.42.

"To enable the state of Michigan to assess a tax in accordance with its existing law, a further report is made as follows:

"The length of the roads actually consolidated and represented by the capital stock of the Chicago & Northwestern Railway Company is 1,716.87 miles, to-wit:

Within the state of Michigan.....	307.49 miles
From Michigan state line to Chicago.....	295.28 miles
Lateral, or diverging lines in Wisconsin.....	678.08 miles
Lateral, or diverging lines in Illinois.....	436.02 miles

And the average number of miles operated during the year was 1,489.31, of which 307.49 miles are in Michigan.

"Using only such consolidated road as a basis, the Michigan proportion of earnings will be formed by proportion as follows:

Average miles of consolidated road operated.....	1,489.31
Earnings of consolidated road.....	\$14,233,802.83
Miles in Michigan.....	307.49

which gives the proportion for Michigan \$2,938,778.33."

The minority report quotes this proportion as actual earnings, while the Michigan report speaks of it specifically as "proportional earnings." The same error in the minority report is repeated for every year up to 1891. The Chicago & Northwestern taxable earnings in Michigan for 1881 were \$1,610,107.37 and for 1882, \$1,627,811.39.

Under the provisions of the Michigan law, the Minneapolis, St. Paul & Sault Ste. Marie Railway Company reported to the state of Michigan for the year 1890, \$142,238.00 and for the year 1891, \$316,892.00, less than its actual Michigan earnings, as the following statement shows:

M., St. P. & S. Ste. M. Ry.

	Minority report.	Add.	Actual earnings.
1890.			
Wisconsin.....	\$798,377 00		\$798,377 00
Michigan.....	480,023 00	\$142,238 00	622,261 00
Minnesota.....	568,710 00		568,710 00
North Dakota.....	26,022 00		26,022 00
Total.....	\$1,871,132 00	\$142,238 00	\$2,013,370 00
1891.			
Wisconsin.....	\$799,238 00		\$799,238 00
Michigan.....	533,680 00	\$316,892,00	850,572 00
Minnesota.....	792,842 00		792,842 00
North Dakota.....	63,975 00		63,975 00
Company's freight..		80,144 00	80,144 00
Total.....	\$2,189,785 00	\$397,036 00	\$2,586,821 00

During the year 1891 the Minneapolis, St. Paul & Sault Ste. Marie Railway Company built an extension, and upon all freight carried for that purpose, it fixed an arbitrary rate to enable it to ascertain the cost of building the extension. The \$80,144.00 enumerated in the above statement represents that charge.

The attention of the Michigan and Wisconsin state authorities was called to this item in the report of the company to said states.

The peculiar taxation clause above quoted was repealed by No. 123, section 50, of the Public Acts of Michigan of 1891, which provided that:

"In case any such railroad or railroad company may have been in the past paying a tax different from that imposed upon railroads by the general law, such company *may* continue to pay such tax or ratable proportion thereof up to the first day of July, one thousand eight hundred and ninety-two; but thereafter every such company shall pay a tax in the manner and in the amount now provided by the general law relating to railways."

C., M. & St. P. Ry.

	Miles.	Minority report.	"Add."	"Deduct."	Actual earnings.
1883.					
Wisconsin	1,177	\$8,289,703 02			\$8,289,703 02
Wis. stockyards and elevator earnings			\$237,163 66		237,163 66
Illinois	309	3,509,168 00	180,202 85		3,689,370 85
Iowa	1,319	5,440,518 22	90		5,440,519 12
Minnesota	1,057	4,974,776 18			4,974,776 18
Minn. stockyards and elevator earnings			50,587 98		50,587 98
Dakota	648	992,738 06			992,738 06
		\$23,206,903 48	\$467,955 39		\$23,674,858 87
1884.					
Wisconsin	1,224	\$8,014,670 86			\$8,014,670 86
Wis. stockyards and elevator earnings			\$274,840 18		274,840 18
Illinois	309	3,351,009 00	189,447 69		3,540,456 69
Iowa	1,411	5,400,203 89			5,400,203 89
Minnesota	1,057	4,995,017 10			4,995,017 10
Minn. stockyards and elevator earnings			89,678 85		89,678 85
Dakota	795	1,167,749 84			1,167,749 84
		\$22,928,644 69	\$553,966 72		\$23,482,611 41
1885.					
Wisconsin	1,228	\$8,310,522 76			\$8,310,522 76
Wis. stockyards and elevator earnings			\$485,516 10		485,516 10
Illinois	309	3,121,259 00	700,086 53		3,821,345 53
Iowa	1,411	5,388,734 69			5,388,734 69
Minnesota	1,057	5,074,763 39		\$20,084 01	5,054,679 38
Minn. stockyards and elevator earnings			78,596 38		78,596 38
Dakota	795	1,285,569 33			1,285,569 33
		\$23,180,849 17	\$1,264,199 01	\$20,084 01	\$24,424,964 17
1886.					
Wisconsin	1,228	\$7,875,112 18			\$7,875,112 18
Wis. stockyards and elevator earnings			\$298,696 14		298,696 14
Illinois	309	3,375,000 00	394,865 43		3,769,865 43
Iowa	1,411	5,675,871 99			5,675,871 99
Minnesota	1,103	5,424,431 26		\$199 60	5,424,231 66
Minn. stockyards and elevator earnings			104,155 41		104,155 41
Dakota	866	1,582,149 65			1,582,149 65
		\$23,932,575 08	\$798,717 98	\$199 60	\$24,730,083 46
1887.					
Wisconsin	1,229	\$8,047,285 12			\$8,047,285 12
Wis. stockyards and elevator earnings			\$318,286 41		318,286 41
Illinois	309	1,476,001 55	2,418,573 36		3,894,574 91
Iowa	1,527	6,215,784 38			6,215,784 38
Minnesota	1,117	5,199,939 32			5,199,939 32
Minnesota stockyards and elevator earnings			71,457 68		71,457 68
Dakota	1,115	1,599,576 87			1,599,576 87
Missouri		31,925 05			31,925 05
		\$22,570,512 29	\$2,808,317 45		\$25,378,829 74

C., M. & St. P. Ry.—continued.

	Miles.	Minority report.	"Add."	"Deduct."	Actual earnings.
1888.					
Wisconsin	1,307	\$7,345,011 28			\$7,345,011 28
Wisconsin stockyards and elevator earnings			\$219,362 61		219,362 61
Illinois	816	1,377,379 51	2,515,713 37		3,892,992 88
Iowa	1,573	6,377,803 92			6,377,803 92
Minnesota	1,120	4,886,950 56			4,886,950 56
Minnesota stockyards and elevator earnings			73,386 32		73,386 32
Dakota	1,215	1,656,234 52			1,656,234 52
Missouri	140	428,611 60			428,611 60
		\$22,071,891 39	\$2,808,462 30		\$24,880,353 69
1889.					
Wisconsin	1,308	\$7,802,954 91			\$7,802,954 91
Wisconsin stockyards and elevator earnings			\$204,020 98		204,020 98
Illinois	817	1,426,113 63	3,037,305 78		4,463,419 41
Iowa	1,573	6,457,624 93			6,457,624 93
Minnesota	1,120	4,727,033 24		\$ 38	4,727,032 86
Minnesota stockyards and elevator earnings			74,479 87		74,479 87
South Dakota		1,662,307 22			1,599,412 01
North Dakota	1,215				62,895 21
Missouri	120	519,387 55			519,387 55
		\$22,595,421 48	\$3,315,806 63	\$ 38	\$25,911,227 72
1890.					
Wisconsin	1,310	\$8,494,288 03			\$8,494,288 03
Wisconsin stockyards and elevator earnings			\$195,349 22		195,349 22
Illinois	817	1,487,809 92	3,148,009 67		4,635,819 62
Iowa	1,553	6,740,309 38			6,740,309 38
Minnesota	1,120	4,685,793 91			4,685,793 91
Minnesota stockyards and elevator earnings			61,843 32		61,843 32
South Dakota	1,096	1,426,620 56			1,426,620 56
North Dakota	118	65,373 58			65,373 58
Missouri	140	518,471 71			518,471 71
		\$23,418,667 12	\$3,405,202 21		\$26,823,869 33
1891.					
Wisconsin	1,354	\$9,500,452 89			\$9,500,452 89
Wis. stockyards and elevator earnings			\$205,646 97		205,646 97
Illinois	817	1,536,216 57	3,363,053 38		4,899,269 95
Iowa	1,553	7,109,264 62			7,109,264 62
Minnesota	1,120	5,810,597 60			5,810,597 60
Minn. stockyards and elevator earnings			52,703 10		52,703 10
South Dakota	1,096	1,656,883 97			1,655,883 97
North Dakota	118	79,661 97			79,661 97
Missouri	140	470,855 95			470,855 95
		\$26,253,943 57	\$3,621,403 45		\$29,875,347 02
1892.					
Wisconsin	1,374	\$10,005,299 57			\$10,005,299 57
Wis. stockyards and elevator earnings			146,614 44		146,614 44
Illinois	817	1,945,158 35	3,283,941 25		5,229,099 60
Iowa	1,553	8,217,376 29			8,217,376 29
Minnesota	1,120	6,807,259 02			6,807,259 02
Minn. stockyards and elevator earnings			37,761 67		37,761 67
South Dakota	1,096	2,278,941 99			2,278,941 99
North Dakota	118	97,585 41			97,585 41
Missouri	140	544,871 92			544,871 92
		\$29,806,492 55	\$3,468,317 36		\$33,264,809 91

The same arrangement, which was fully explained in the remarks upon our report of the Chicago & Northwestern Railway Company's earnings, has been retained in the Chicago, Milwaukee & St. Paul statement. We give in our statement the company's stockyard and elevator earnings for Wisconsin and Minnesota separately, because these earnings are derived from property which is subject to local taxation.

Aside from the stockyards and elevator earnings referred to above, and the earnings for Minnesota, as given in the minority report for 1885 (a clerical error, perhaps, accounting for this), there is no material difference between the earnings as given in the minority report and the actual earnings as given by us, excepting only the Illinois earnings.

	Minority report C. & N. W. earnings.	Minority report C., M. & St. P. earnings.	C., M. & St. P. actual earnings June 30.
Illinois, June 30, 1883.....	\$3,509,168 00	\$3,509,168 00	\$3,494,349 17
Illinois, June 30, 1884.....	3,351,003 00	3,351,003 00	3,541,717 19
Illinois, June 30, 1885.....	2,121,259 00	3,121,259 00	3,732,750 25

From this table it is evident that the Chicago & Northwestern and the Chicago, Milwaukee & St. Paul railway companies were credited in the minority report with the same earnings for the years ending June 30, 1883, 1884 and 1885.

In looking over the reports of the Chicago & Northwestern and the Chicago, Milwaukee & St. Paul, to the Illinois railroad commissioners at Springfield, we found that the Chicago & Northwestern reported the above amounts as its Illinois "proportional" earnings, and that the Chicago, Milwaukee & St. Paul reported the amount given in the last column of the above table as its Illinois "actual" earnings.

The Chicago, Milwaukee & St. Paul Illinois earnings for the year 1886 were estimated, as stated on page 989 of the minority report. According to the Illinois report of

1886, page 134, the actual earnings of the Chicago, Milwaukee & St. Paul Railway were \$3,766,415.14, and the *proportional* earnings in Illinois were given as \$1,539,257.56.

Again, the minority report invariably gives the Illinois earnings of the Chicago & Northwestern and of the Chicago, Milwaukee & St. Paul for the year ending June 30, while the earnings of the other states are given for the calendar year.

In examining the reports of the Chicago & Northwestern Railway Company to the Illinois commissioners, we found that said company always reported Illinois "*proportional*" earnings, i. e., such a proportion of the earnings of the *whole road* as the miles operated in such state bore to the total mileage operated. and that *such fact was always specifically stated*.

For the years 1883, 1884 and 1885, the Chicago, Milwaukee & St. Paul Railway Company, as above stated, reported to Illinois its actual state earnings; for the year 1886, its actual and proportional Illinois state earnings, and since 1887 the *proportional* earnings only, always *specifically stating such fact*.

C. & N. W. Co's. earnings in Dakotas and Wisconsin.

			Actual earnings Dec. 31.
June 30, 1886	Proportional for Dakota		
" 1887	Proportional for Dakota	\$3,698,690 81	\$994,821 59
" 1888	Proportional for Dakota	4,374,628 75	935,351 02
" 1889	Proportional for Dakota	4,759,565 01	902,531 08
" 1889	Proportional for Dakota	4,566,110 64	911,409 12
" 1890	Actual for South Dakota	852,597 62	718,299 17
" 1891	Actual for South Dakota	722,587 74	777,036 79
" 1892	Actual for South Dakota	882,486 54	1,014,161 13
" 1890	Actual for North Dakota	7,050 06	6,599 30
" 1891	Actual for North Dakota	6,447 16	6,750 73
" 1892	Actual for North Dakota	7,207 72	7,270 45
" 1887	Actual for Wisconsin	5,661,405 16	5,737,690 80
" 1888	Actual for Wisconsin	5,445,286 69	5,357,317 38
" 1889	Proportional for Wisconsin	5,720,397 19	5,562,851 13
" 1890	Proportional for Wisconsin	6,109,307 12	6,269,488 69
" 1891	Proportional for Wisconsin	6,222,476 99	6,759,183 44
" 1892	Proportional for Wisconsin	7,102,831 47	7,212,273 25

C. M. & St. Paul earnings in Dakotas and Wisconsin.

			Actual earnings Dec. 31.
June 30, 1890	Proportional for South Dakota	5,133,209 03	1,426,620 56
" 1891	Actual for South Dakota.....	1,432,096 54	1,656,893 97
" 1892	Proportional for South Dakota.....	6,056,150 13	2,278,941 99
" 1890	Proportional for North Dakota.....	553,295 87	65,373 58
" 1891	Actual for North Dakota.....	71,292 46	79,661 97
" 1892	Proportional for North Dakota.....	648,886 13	97,585 41
" 1890	Proportional for Wisconsin.....	6,131,259 45	8,494,288 03
" 1891	Proportional for Wisconsin.....	6,631,439 54	9,590,452 82
" 1892	Proportional for Wisconsin.....	7,790,359 20	10,005,299 57
" 1893	Proportional for Wisconsin.....	8,208,863 72	10,732,263 87

Both the Chicago & Northwestern and the Chicago, Milwaukee & St. Paul companies repeatedly reported proportional state earnings not only to Illinois but also to the Dakotas and to Wisconsin, as the above tables show. Why? Because this is a convenient method of maintaining the proper ratio between state earning and state operating expenses, which latter account the companies are unable to separate by state lines.

On page 995 of the minority report it is stated that "The Railroad Commissioners' Report for Illinois shows that in 1889 the percentage of operating expenses to earnings of the Wisconsin Central lines amounted to forty-four per cent., while the average percentage of operating expenses to earnings of sixty-six roads running into Chicago was sixty-six per cent.," and that "the same report for 1890 shows that the percentage of operating expenses to earnings on the Wisconsin Central lines amounted to only thirty-three and eighty-six hundredths per cent."

Our examination of the Illinois reports at Springfield disclosed the fact that the Wisconsin Central Railway Company reported to Illinois its actual Illinois state earnings, which include the Chicago & Northern Pacific terminal rental, and its Illinois proportional operating expenses; while the Chicago, Milwaukee & St. Paul, and the Chicago & Northwestern and nearly all other Illinois companies reported proportional operating expenses as well as proportional earnings. Thus the low percentage of oper-

ating expenses to earnings on the Wisconsin Central lines in Illinois is accounted for.

On pages 992, 994 and 995 of the minority report we find the following tables:

C. & N. W. R. R. Co.

Date.	Gross earnings in Wisconsin as returned for taxation.	Gross earnings in Illinois as shown by statement of R. R. company.	Earnings per mile in Wisconsin.	Earnings per mile in Illinois.	Difference in earnings per mile in favor of Illinois.
1881.....	\$4,960,461 67	\$7,560,035 11	\$6.619 00	\$15,120 00	\$8,501 00
1882.....	5,690,442 04	7,609,688 80	5,358 00	15,219 00	8,861 00
1883.....	5,804,635 96	7,263,521 44	6,429 00	14,257 00	7,828 00
1884.....	5,392,535 06	7,500,442 25	5,861 00	14,715 00	8,854 00
1885.....	5,544,853 93	7,787,643 23	6,013 00	15,444 00	9,431 00
1886.....	5,254,810 77	7,908,037 50	5,699 00	15,659 00	9,960 00
1887.....	5,737,690 80	8,335,490 48	6,104 00	16,506 00	10,402 00
1888.....	5,357,317 88	8,115,194 27	5,675 00	13,848 00	8,173 00
1889.....	5,562,851 13	8,351,691 34	5,880 00	14,252 00	8,572 00
1890.....	6,269,488 69	8,951,343 85	6,627 00	15,273 00	8,646 00
1891.....	6,759,183 44	9,405,825 87	7,134 00	15,836 00	8,702 00
1892.....	7,212,273 25	10,457,270 62	7,623 00	17,436 00	9,813 00

C., M. & St. P. Ry. Co.

1888.....	\$3,389,703 02	\$3,689,370 85	\$7,050 00	\$11,901 00	\$4,851 00
1884.....	7,014,670 86	3,540,450 69	6,999 00	11,430 00	4,421 00
1885.....	8,310,522 73	3,821,345 53	6,762 00	12,327 00	5,565 00
1886.....	7,875,112 18	3,769,845 43	6,407 00	12,160 00	5,653 00
1887.....	8,047,285 12	3,894,574 91	6,531 00	12,536 00	6,005 00
1888.....	7,345,011 8	3,892,943 88	5,620 00	12,350 00	6,730 00
1889.....	7,802,954 91	4,463,419 41	5,955 00	14,050 00	8,094 00
1890.....	8,494,288 03	4,651,819 62	6,196 00	14,578 00	8,382 00
1891.....	9,590,452 89	4,899,269 95	6,906 00	15,406 00	8,500 00
1892.....	10,005,299 57	5,229,099 60	7,281 00	16,443 00	9,612 00

Wisconsin Central—Northern Pacific Lessee.

1889.....	\$1,217,082 82	\$460,472 00	\$5,840 00	9,897 00	\$3,557 00
1890.....	4,193,632 20	760,660 81	5,805 00	15,523 00	9,751 00
1891.....	4,071,637 11	951,086 77	5,639 00	17,945 00	12,306 00
1892.....	4,592,671 26	948,542 15	5,996 00	17,103 00	11,904 00

In examining the Wisconsin Central, Northern Pacific, lessee, books for the years 1890, 1891 and 1892, we found that to the actual Illinois earnings there was added \$29,166.66 per month, or \$350,000.00 per annum, as rental for the Chicago & Northern Pacific terminals in and near Chicago. The Chicago & Northern Pacific terminal arbitrary charge was deducted from the earnings of the Wisconsin Central lines, accruing to said lines on all business in and out of Chicago.

As this amount was largely taken from Wisconsin earnings, it added about \$6,000.00 per mile to the actual Illinois earnings. The increase in Wisconsin Central actual gross earnings per mile in Illinois from \$9,397.00 in 1889 to \$15,523.00 in 1890 is mainly due to this charge. After eliminating this amount and examining the books of the company, we found that the Illinois earnings of said company still exceeded those of Wisconsin by more than \$6,000.00 per mile.

For the excess in the earnings per mile in Illinois over the earnings in any other state, to which our attention was drawn by the above tables, we assign the following reasons, viz.:

1. "Nearly all of the lines and branches of the said Chicago & Northwestern, Chicago, Milwaukee & St. Paul and Wisconsin Central companies before entering the state of Illinois, converge into trunk lines, leaving only a few miles of branch road in Illinois to reduce the gross earnings per mile of the trunk lines."

2. "Illinois being more densely populated, passenger and freight traffic is much greater than in other states, and more trains are run in and out of the city of Chicago for short distances than run into or through any of the other states traversed by said companies."

3. Chicago being the great central point for both the passenger and freight business of all of said roads, business naturally increases in volume per mile the closer the trains reach the market.

The Wisconsin earnings of the Eastern Railway of Minnesota confirm the last proposition. The Great Northern Railway, the feeder of said road, earns about \$4,000.00 per mile on the entire system, while the Eastern Railway of Minnesota, with Superior and Duluth for its markets, reports the earnings per mile in Wisconsin as follows:

1893.....	\$13,319 07 per mile.
1894.....	13,845 33 per mile.
1895.....	13,207 05 per mile.
1896.....	18,110 02 per mile.
1897.....	20,543 44 per mile.
1898.....	19,248 32 per mile.

With this reference to the minority report, we now call attention to the methods of our investigation.

The following railroad companies were investigated by us:

Minneapolis, St. Paul & Sault Ste. Marie.

Illinois Central.

Green Bay & Western.

Kewaunee, Green Bay & Western.

Duluth, South Shore & Atlantic.

Eastern Railway Company of Minnesota.

Wisconsin Central.

Northern Pacific — Wisconsin Central Lines.

Chicago, Burlington & Northern.

Chicago, St. Paul, Minneapolis & Omaha.

Chicago & Northwestern.

Chicago, Milwaukee & St. Paul.

To fully investigate the earnings of any of the large companies for one month would require the same number of clerks now employed in the office of the company, i. e. in the Chicago & Northwestern office, about two hundred and seventy-five clerks; in the Chicago, Milwaukee & St. Paul office, about two hundred and fifty clerks. Under these circumstances the utmost that could be done was to test the books.

For this purpose we requested of the freight auditors of said companies that the monthly abstracts of local and interline way-bills received and forwarded, together with the original way-bills which accompany the freight, be submitted to us. After checking several hundred way-bills with the abstracts and footing the amounts reported received and forwarded from certain stations, the "Record of monthly summary of local and interline way-bills received at and forwarded from ——— stations for month of ———, 18—" was called for. The stations, the years and the months were selected by us without any suggestion on the part of the railroad officials. The *Record*, according to the instructions printed on it, "must be used by agents for

rendering monthly returns to the freight auditor and for making a station record of the total footings of each account as shown on the monthly abstracts of local and interline way-bills." The stations are arranged according to the divisions of the road.

Having satisfied ourselves of the correctness of these Records by checking them with the abstracts, the "Division Sheets" were handed to us. Upon the Division Sheets we found copied the stations between which the freight was carried and also the freight charges. These items were checked by us with the originals. We found that freight charges were apportioned on a mileage basis.

The following serves to illustrate the meaning of the term "mileage basis" when used hereafter. If freight or passenger business is carried by the railroad companies between two points in Wisconsin—say Madison and Milwaukee,—Wisconsin is credited with the entire earnings, or one hundred per cent. But if the freight or passenger business is carried, say from Chicago to Milwaukee, the distance between the two points being eighty-five miles, of which forty four and eight-tenths miles are in Illinois and forty-four and two tenths miles are in Wisconsin, then Illinois will be entitled on a percentage basis to fifty-two and seventy-one hundredths per cent. and Wisconsin to forty-seven and twenty-nine hundredths per cent. of the earnings.

The system of keeping accounts of state earnings is shown by the following table:

Chicago & Northwestern Railway.

Between.	Amount.	State earnings. Illinois.	State earnings. Wisconsin.	Per cent.
Irving Park and Oconto.....	\$37 50	.....	\$28 12	75
Irving Park and Platteville.....	5 20	.....	3 59	69
Mayfair and Milwaukee.....	746 25	.....	305 96	41
Total.....	\$788 95	\$451 28	\$337 67	

After thus entering all the freight charges and apportioning them between the states on a mileage basis, a recapitulation of the month's business and of the state and division earnings is made. If any claims or corrections for freight were allowed during the month, the sum is entered in the "amount" column, and apportioned on a mileage basis between the states.

After thus examining the books we found that the local freight business of the Chicago, Milwaukee & St. Paul Railway for one month amounted to \$1,732,449.79, apportioned to the states on a mileage basis as follows:

Illinois	\$274,527 56
Wisconsin	590,483 92
Iowa	419,557 72
Minnesota	324,285 03
North Dakota	6,721 62
South Dakota	66,387 51
Missouri	34,577 47
Michigan	15,898 96
	<u>\$1,732,449 79</u>

And that the total freight business of the Chicago & Northwestern Railway for the year ending June 30, 1891, amounted to \$19,980,909.85, apportioned on a mileage basis as follows:

Illinois	\$7,883,663 10
Iowa	5,231,780 71
Wisconsin	4,560,159 81
Michigan	2,708,933 90
Minnesota	1,203,711 67
South Dakota	335,286 52
North Dakota	1,737 14
	<u>\$19,980,909 85</u>

In the passenger auditor's department we checked the agents' monthly report of tickets sold, the conductors' cash reports, foreign coupon tickets—company's proportion,—and local coupon tickets sold, with the division sheets. After footing and cross footing and figuring the percentage due Wisconsin on a mileage basis, we copied from the recapitulation sheet of the Chicago, Milwaukee & St. Paul Railway for July, 1896, the following figures:

Local passenger earnings	\$520, 246 74
Conductors' cash.....	31,918 81
Foreign coupon and excess baggage (Chicago, Milwaukee & St. Paul proportion).....	45,789 17
Local coupons.....	26,312 39
Total	\$624,267 11

Apportioned on a mileage basis to the states as follows:

Illinois.....	\$93,406 51
Wisconsin	239,842 23
Iowa.....	118,145 31
Minnesota	125,844 33
South Dakota.....	33,585 34
North Dakota.....	2,971 03
Missouri	6,943 43
Michigan.....	3,528 88
Total.....	\$624,267 11

The Chicago & Northwestern Railway Company now figures all passenger business to and from Dakota on a "pro-rate" basis because the railroad companies are permitted to charge a higher rate in Dakota than in Wisconsin or in any other state. By figuring the passenger earnings on a mileage basis, other states would share in the Dakota rate.

In addition to the items mentioned, we examined the excess baggage earnings, both local and foreign, the milk earnings, parlor car earnings of all the companies, and the sleeping car earnings of the Chicago, Milwaukee & St. Paul Railway.

There are several methods in vogue in regard to the division of "mileage." The smaller roads invariably apportion on the mileage basis the mileage as it is "pulled." The Chicago, Milwaukee & St. Paul Railway for two months about every two years apportions on the mileage basis to the states and to the divisions the mileage as it is "pulled," and then prepares a percentage table from these returns, according to which the mileage sold is thereafter apportioned.

The Chicago & Northwestern Railway Company places

the total mileage sold during one month in the "amount" column, then figures the percentage of the monthly local passenger earnings of each division, and if the division passes beyond the limits of one state, then the percentage for each sub-division of division is figured, and upon this percentage basis, it apportions the mileage. The following table illustrates the mileage apportionment of the Chicago & Northwestern Railway:

The dining and buffet car service of all the companies examined by us is not a paying investment, and the gross earnings from that source are not reported as taxable by any of the companies, the Wisconsin Central alone excepted.

"Our company," said one of the railroad officials, "buys one hundred dollars' worth of eatables for which it gets about fifty dollars in return. On the one hundred dollars we pay a tax of four dollars. Do you expect us to pay two dollars' additional tax for losing fifty dollars?" This illustration brings out the reason for the refusal of the companies to report the dining car earnings as taxable.

The Wisconsin Central is the only company reporting dining car earnings as taxable, which is due to the fact that the news and dining car service are under one superintendent, for which reason this department is able to show net earnings.

Mail, express and news service, being by contract restricted to certain divisions of the road, the earnings thereof are apportioned on mail, express and news mileage basis. Copies of part of the mail, express and news contracts and the apportionment of the earnings are on file in the secretary of state's office and will be shown upon request.

The rentals received from railroad eating houses and hotels are included by all companies in their taxable earnings. Some companies include in their taxable earnings, the amount paid for, as well as the amount received from rents for tracks, yards and terminals; other companies include in the taxable earnings the net balance only.

Sections 32 and 33 of the "Classification of Operating Expenses" prescribed by the inter-state commerce commission, provides that "Switching Charges-balance represents the net balance paid to other companies for switching cars or locomotives," and that "Car Mileage-balance represents the net balance paid to other companies, firms or individuals for use of cars interchanged on a car mileage basis." Upon investigation we found that all Wisconsin companies paid out on their entire systems more for the two items mentioned above than they received, and in

accordance with the provisions quoted, earnings from these sources were not returned as taxable.

If the switching charge is part of the rate, the Wisconsin Central reports such charge as taxable earnings. The Chicago, Burlington & Northern Railway distinguished between switching charges paid by railroad companies and those paid by individuals, reporting the latter only as taxable earnings.

In checking the Green Bay & Western Company's books we found that said company uses the Chicago & Northwestern tracks from Onalaska to Marshland. For this privilege the Green Bay & Western pays the Chicago & Northwestern about \$7,000.00 per annum, the sum paid depending upon the volume of business done. Said amount is not included by the Green Bay & Western Company in its taxable earnings for the reason that the Chicago & Northwestern includes the amount in its Wisconsin taxable earnings.

A glance at the railroad map of the Chicago & Northwestern and the Chicago, Milwaukee & St. Paul shows that by judicious routing both companies might avoid the Wisconsin tax on the greatest portion of the Minnesota and Dakota business to and from Illinois. When we found that the tax paid by said companies to Wisconsin greatly exceeded that paid to any other state traversed by these companies, and that by routing the Minnesota and Dakota business through Iowa, the Wisconsin tax could be avoided without thereby increasing the tax of the companies in Iowa, we made inquiries concerning this point. We were assured by the officials, however, that the routing orders called for shipment of all business via the shortest line.

The tables heretofore given served to illustrate the business methods of the Chicago, Milwaukee & St. Paul and the Chicago & Northwestern Railway Companies. Similar tables, to illustrate the business methods of each company investigated, by us, will be shown upon request.

The system of the Wisconsin Central, Northern Pacific, lessee, of keeping accounts of division and state earnings is shown by the following table of the company's monthly earnings for the calendar year 1891, and the semi-annual earnings for the calendar 1892:

Earnings of Wisconsin Central Lines, Northern Pacific R. R. Co., Lessee.

	Illinois C. & N. P.	Wisconsin. Mil. & Rugby.	Illinois. C. W. & M.	Wisconsin. C. W. & M.	Wisconsin. M. & L. W.	Wisconsin W. Ct. R. R.	Wisconsin W. Ct. Co	Minnesota W. Ct. Co.	Minnesota W. Ct. Co.	Michigan W. Ct. Co.	Total.
1891.											
January.....	\$29,166 67	\$9,851 60	\$33,395 82	\$38,236 78	\$44,569 73	\$132,593 20	\$64,997 20	\$10,038 14	\$2,589 42	\$1,281 43	\$371,719 89
February.....	29,166 67	8,726 04	35,598 89	34,263 02	40,115 43	109,652 03	55,602 05	9,759 01	2,492 04	1,127 20	326,502 38
March.....	29,166 66	8,764 08	41,764 70	42,013 70	50,971 81	141,645 56	76,098 84	11,856 95	2,943 36	1,350 58	408,576 24
April.....	29,166 67	8,691 92	42,935 96	39,589 48	48,418 34	144,142 35	75,624 77	12,066 48	2,875 63	1,106 71	404,618 31
May.....	29,166 67	8,670 50	44,854 27	37,370 10	47,705 99	136,672 20	74,184 16	9,666 13	2,602 58	1,812 64	390,705 24
June.....	29,166 66	8,869 13	58,111 27	37,288 04	42,210 61	143,056 15	91,329 02	10,683 74	2,736 32	3,070 89	426,526 83
July.....	29,166 66	9,027 76	69,788 06	39,889 14	46,203 87	157,977 61	111,661 74	10,934 45	2,819 13	3,579 42	481,077 84
August.....	29,166 67	9,530 47	68,245 30	45,088 62	50,171 12	161,108 22	112,535 90	11,790 05	2,958 36	4,232 24	494,826 95
September.....	29,166 67	12,333 70	55,024 39	44,348 61	52,810 42	163,361 58	115,989 58	13,397 12	3,287 47	2,669 46	492,389 00
October.....	29,166 66	14,153 38	52,989 04	50,777 84	61,033 64	172,820 05	105,346 21	14,974 18	3,486 42	1,261 95	506,014 37
November.....	28,166 67	12,266 42	45,020 71	47,445 26	53,958 56	159,592 14	85,969 38	13,618 81	3,529 38	1,073 79	451,641 12
December.....	29,166 67	11,832 27	48,353 36	50,043 66	57,644 21	160,607 84	96,179 08	15,844 35	4,760 14	1,187 89	475,624 47
Total.....	\$350,000 00	\$122,722 27	\$601,066 77	\$506,354 25	\$593,813 73	\$1,783,228 93	\$1,065,517 93	\$144,634 41	\$37,110 25	\$23,754 20	\$5,228,222 74
1892.											
From January to June	\$175,000 00	\$70,168 69	\$253,890 55	\$241,951 11	\$287,291 32	\$911,238 19	\$588,593 58	\$73,300 33	\$19,033 38	\$21,873 28	\$2,642,390 43
From July to Dec'm'r.	175,000 00	79,891 52	344,651 60	271,024 23	316,913 00	1,084,635 36	740,914 26	78,889 08	20,326 81	43,120 43	3,155,366 29
Total.....	\$350,000 00	\$150,060 21	\$598,542 15	\$512,975 34	\$604,204 32	\$1,995,923 55	\$1,329,507 84	\$152,189 41	\$39,360 19	\$64,993 71	\$5,797,756 72

In conclusion, your commission desire to say that every facility and courtesy was extended by the different railroad companies for a thorough and complete examination.

The technical work of making the investigations included in this report was performed by Mr. Ernst Kuechle, of Milwaukee, an expert railroad accountant, Mr. Thomas W. Purtell, of Cumberland, railroad accountant, and Mr. A. M. Millard, of Antigo, a practical accountant.

The experts report that in all their investigation they could find no evidence of any attempt on the part of any of the railroad companies to evade their share of the tax by falsification of their earnings, or to conceal any of their business affairs from your Commission.

Respectfully submitted,

W. H. MYLREA,

Attorney General.

D. J. M'KENZIE,

Railroad Commissioner.

HENRY CASSON,

Secretary of State.

Commission appointed under Chapter 350, Laws of 1897.

FIRST BIENNIAL REPORT

OF THE

COMMISSIONERS

OF THE

Geological and Natural History Survey



MADISON
DEMOCRAT PRINTING COMPANY, STATE PRINTER,
1898.

STATE OF WISCONSIN.

GEOLOGICAL AND NATURAL HISTORY SURVEY

BOARD OF COMMISSIONERS:

EDWARD SCOFIELD,
Governor of the State.

L. D. HARVEY,
State Supt. of Pub. Instruction.

CHARLES K. ADAMS,
Pres. of the University of Wisconsin.

EDWIN E. BRYANT,
Pres. of the Commissioners of Fisheries.

C. DWIGHT MARSH,
*Pres. of the Wisconsin Academy of Sciences,
Arts, and Letters.*

OFFICERS OF THE BOARD:

CHARLES K. ADAMS,
President.

EDWIN E. BRYANT,
Vice-President.

C. DWIGHT MARSH,
Secretary.

JAMES O. DAVIDSON, STATE TREASURER,
Treasurer.

E. A. BIRGE, MADISON,
Director and Superintendent.

LETTER OF TRANSMITTAL

Madison, December 23d, 1898.

HONORABLE EDWARD SCOFIELD,
Governor of Wisconsin.

SIR:—I present herewith, for transmission to the legislature, the first biennial report of the Commissioners of the Geological and Natural History Survey. This survey was authorized by chapter 297 of the laws of 1897, by which there were appointed as commissioners: The governor of the state; the state superintendent of public instruction; the president of the state university; the president of the Commissioners of Fisheries; and the president of the Academy of Arts and Sciences. The commissioners met for the first time on May 7th, 1897, and organized by the election of the president of the state university as president of the board of commissioners; Honorable E. E. Bryant, president of the Commissioners of Fisheries, as vice-president; and Professor C. Dwight Marsh, president of the Wisconsin Academy, as secretary. Professor E. A. Birge, of the state university, was elected as superintendent of the Survey. During the first year the superintendent served without compensation, giving to the work of the Survey only such time as was available outside of university duties and such time as was available in vacation after the closing of the summer school. In 1898 he gave the entire summer vacation to the work of the Survey, resigning his position in the summer school, and was paid for his services during the year the sum of \$300; being the same amount that he would have received had he taught in the university summer school.

The legislature appropriated for the use of the commission the sum of only \$5,000 a year for two years. It was therefore impossible for the commission to undertake all of the work which it was authorized to do by the terms of the law which

created it. It was determined, therefore, to concentrate attention on a few of the more important and pressing subjects of investigation. First in this list was a study of the building and ornamental stones of the state. Dr. E. R. Buckley was appointed as assistant geologist of the Survey, on the recommendation of the superintendent, and has given his entire time to the preparation of a report on the building stones of the state, considered both from the scientific and the industrial aspects. This report is now completely in type and is ready to be issued, with the exception of the colored plates illustrating the texture and natural colors of the more important building stones of the state. These have been delayed in printing, but will be completed in a very short time, when the report will be issued.

The commissioners determined that the next subject in order of importance was the completion of the geological survey of the state. As was pointed out to the legislature when the bill establishing the Survey was under consideration, a large area in the north central part of the state has been studied either not at all or very imperfectly, owing to the fact that at the time of the last geological survey the region was almost wholly without inhabitants. Dr. Samuel Weidman was appointed assistant geologist and directed to begin work in the region about Wausau and Merrill, an area in which little or no geological work had been done. In this district also a considerable amount of money has been expended in the search for iron and it seemed worth while, therefore, to investigate the area from economic reasons. Dr. Weidman has studied about one thousand square miles in this district, having spent two seasons in the field, and is now beginning to prepare his report on the district.

The investigation of the lakes of the southern and eastern part of the state has formed the third subject of investigation. In this important field a beginning only has been made by the preparation of careful hydrographic maps, showing the outlines of the lakes and especially the depth of water in them. It is designed to continue and extend this investigation to the biology and chemistry of these lakes and of the streams and wells of the same region.

Application was made to the commissioners of this Survey

by the forestry commissioners of the state for aid in the preparation of a report on the forestry conditions of northern Wisconsin. Accordingly, an arrangement was made with the United States Department of Agriculture by which Mr. Filibert Roth was assigned to duty in Wisconsin; the United States Department of Agriculture paying his salary, and the Wisconsin Survey paying his traveling and other expenses. As a result of his investigation, the first bulletin of the Survey was published in 1898, On the Forestry Conditions of Northern Wisconsin. Five thousand copies of this bulletin were published and most of them have been distributed by the Forestry Commission, and by the Survey, to the citizens of Wisconsin. It is hoped that the facts and recommendations of this report will aid the forestry commissioners and the legislature in the formulation of wise legislation on this important subject.

The work of the Survey has been carried on in several other directions, but on a decidedly smaller scale. The superintendent of the Survey and Professor Marsh have devoted some time to the beginning of a biological survey of the Wisconsin lakes. Professor L. S. Cheney of Madison assisted Mr. Roth for some time in the field work preliminary to the preparation of his report, and during the summer of 1898 has carried on the field work necessary for the preparation of an educational bulletin on the forest trees of the state. Professor D. P. Nicholson of Appleton and Professor G. L. Collie of Beloit have begun the preparation of reports on the physical geography of different regions of the state. Professor Collie's work has been done in the southern region and Professor Nicholson's in the northern lake region of the state. Professor R. D. Salisbury of Chicago has prepared a report on the geology and physical geography of the Dells and Devil's Lake. None of the persons named in this paragraph have received for these services anything beyond the repayment of their necessary expenses while in the field.

The publications of the Survey are issued in three series of bulletins:

1. The economic series, in which are reported the results of investigations of economic importance.

2. The scientific series, in which are published the results of investigations whose interest is scientific rather than economic.

3. The educational series, in which are published the results of studies of the resources and natural history of the state, presented in such form as to make them available for use in the schools.

Two bulletins have already been issued and distributed:

Bulletin I.—On the Forestry Conditions of Northern Wisconsin, by F. Roth, to which reference has already been made.

Bulletin II.—The first bulletin of the scientific series: On the Habits and Instincts of the Solitary Wasps, by G. W. and E. G. Peckham.

Two other bulletins are in type and about ready for distribution:

Bulletin III.—A scientific bulletin: On the Pre-Cambrian Igneous Rocks of the Fox River Valley, by S. Weidman.

Bulletin IV.—On the Building and Ornamental Stones of Wisconsin, by E. R. Buckley.

Through the courtesy of the Secretary of State the finances of the Survey have been administered through his office. Claims against the Survey are made out on a proper form, are approved by the superintendent of the Survey, and are countersigned by the president of the commissioners. They are then sent to the secretary of state, who audits the account and pays it by warrant, in the same way that other claims against the state are paid. A report from his office is appended showing the nature and amount of the warrants drawn against the appropriation for the Survey. From the report of the superintendent which is given herewith, it will be seen that about one-quarter of the \$10,000 appropriated to the Survey has been expended in the preparation of the building stone report; more than one-fifth has gone into the geology of the northern part of the state; about one-eighth has been expended in the lake survey; on the investigations of the forests there was expended about \$700; and the remainder of the appropriation has been distributed in paying the expenses of the minor investigations mentioned above and in defraying the cost of administration. Something

more than a thousand dollars of the appropriation is still in hand and will be used for defraying the expense of completing some unfinished investigations on the building stones, and for carrying on the work of the assistant in geology during the coming winter.

The commissioners desire to give cordial recognition to the assistance which the Survey has received from various scientific men in the state, either almost or wholly without compensation. Professor C. R. Van Hise has acted as consulting geologist to the Survey, giving much time and thought to directing and planning the work of geology and counseling with the superintendent in other matters. His services have been given entirely beyond compensation beyond the repayment of actual expenses during short trips into the field to supervise the work of the assistants of the Survey. The gentlemen named in the earlier part of the report, Professors Salisbury, Collie, Nicholson, Marsh, and Cheney, have devoted much time and labor to carrying on the investigations which they have undertaken, and have received from the Survey nothing more than the repayment of expenses while in the field.

The commissioners feel that much work has been accomplished by the Survey,—an amount quite beyond what might have been expected from the meager appropriations made. It is obvious, however, as is pointed out in the report of the superintendent appended hereto, that the objects of the Survey cannot be met, even with a fair degree of completeness, unless the amount of money appropriated to this purpose by the state is very considerably increased. The commissioners desire to maintain two geological parties in the field; to undertake the investigation of the clays and clay industries of the state; to begin the chemical and biological investigation of the waters of the southern part of the state; and to devote a reasonable sum of money to the completion of the topographical map of the state. If these plans are to be carried out, an appropriation of from \$15,000 to \$17,000 annually will be needed by the Survey.

C. K. ADAMS,

President of the Board of Commissioners.

REPORT OF THE SUPERINTENDENT OF THE SURVEY.

To the Commissioners of the Geological and Natural History Survey.

GENTLEMEN:—I submit herewith my report as director of the Survey under your charge, for the year ending October 29, 1898. I have extended the report somewhat beyond the term of one year, so as to include the general work of the biennial term, which closed Dec. 31.

I. PERSONNEL OF THE SURVEY.

The following persons have been employed by the Survey during the past year, with compensation stated in each case:

E. A. Birge, director, receives \$300.00 for services during the year 1898, besides expenses in the field. No compensation during 1897.

C. R. Van Hise, consulting geologist, without compensation, except expenses while in the field.

E. R. Buckley, assistant geologist, \$800.00 per annum, and expenses while in the field.

S. Weidman, assistant geologist, \$800.00 per annum, and expenses while in the field.

L. S. Smith, in charge of hydrography, paid \$0.50 per hour for office work, and \$5.00 per day and expenses while in the field. In the field between two and three weeks.

H. M. Tripp, surveyor, employed about six weeks of the winter at \$70.00 per month, and expenses.

George L. Collie, of Beloit, engaged in writing report of last summer's work, has received no compensation.

D. P. Nicholson, of Appleton, employed about a month during the summer, receiving \$3.50 per day in lieu of expenses.

L. S. Cheney, employed during the summer, receiving no compensation beyond actual expenses.

C. Dwight Marsh, of Ripon, gave some time to the hydrographic survey of Green lake and a short time during the summer to biological lake work. He received \$3.50 per day in lieu of expenses.

Besides these persons, there have been employed various persons as rodmen, etc., in surveying, at various small compensations and for limited amounts of time. Miss F. K. Denniston has done most of the drawing for the building stone report, being paid various rates, according to the nature and amount of service. Prof. W. W. Daniells has been employed to make about twenty analyses of rock for the building stone report. I ought not to omit to mention the services of Mr. E. C. Chandler, of Ripon, who has devoted much time, without compensation, to preparing the map of Green lake, and through whose aid the results are far more accurate than they would otherwise have been.

II. FINANCIAL STATEMENT.

By the kindness of the secretary of state, the Survey has been permitted to send its accounts to that office to be audited. No money has been drawn from the treasury directly by the officers of the Survey, but the claims as presented have been endorsed by the superintendent of the Survey, counter-signed by the president or vice president of the board of commissioners, and then have been sent to the secretary of state's office, where they have been audited and the necessary warrants have been drawn upon the treasury. The director of the Survey is especially grateful to have been able to conduct the business affairs of the Survey in this manner.

The Survey has spent thus far, during the two years of its existence, a little more than \$8,500.00 out of the \$10,000.00 appropriated to it. A detailed statement of the finances will appear from a report made by the secretary of state, but the general direction in which the money has been expended can be

seen by the following summary of my own accounts. My books show that the following sums have been expended for various purposes, during the biennial period up to Dec. 31, 1898, and including the expenses for December:

Building stone	\$2,418 37
Geology.....	2,030 19
Forestry and Botany	614 09
Lake survey.....	1,304 84
For work on forest trees	293 88
Physical geography.....	381 79
Lake biology.....	605 57
Report on geology of Devils Lake	400 00
Administration.....	441 76
Drawings for bulletin No. II.....	60 00
	<hr/>
	\$8,565 16

The report from the secretary of state shows that warrants were paid up to October 30, 1898, to the amount of \$6,871.61; the difference between this sum and that reported in the foregoing account being due to the fact that warrants are included in my account which were paid at a later date than that at which the secretary of state closed the year's accounts.

There was thus a balance on January 1, 1889, of \$1,449.51. Of this sum there is appropriated to the completion of the bulletin on forest trees \$200, and there are bills outstanding amounting to about \$85. About \$150 will be needed to complete the lake survey, so that there is at this date a free sum of about \$1,000. It has been my intention, as directed by the commissioners last year, to have a sufficient balance on the first of January to continue the geological work of the Survey until such a time as any appropriations made by the next legislature may become available. I have, therefore, reserved sufficient money to continue this work of the Survey without interruption for three months. I estimate that the following sums will be necessary for this purpose:

For Dr. Weidman, who will be engaged in the preparation of his report on the region which he has surveyed, salary and expenses	\$350 00
For Dr. Buckley, who will be occupied in making a somewhat elaborate series of tests of building stones, in order to complete the observations embodied in his report, there will be needed for salary	200 00
and for expenses	250 00
Total	<u>\$800 00</u>

Some small sums will be necessary for continuing the office-work, and any other balance I shall use in bringing together apparatus, etc., necessary for the work of the coming summer.

III. WORK OF THE SURVEY.

A. I wish to acknowledge with special gratitude the services to the Survey of Prof. C. R. Van Hise. He has directed the work of the geological assistants, and has devoted much time to this service, and besides has constantly advised with me on all matters pertaining to the Survey, whether included in the department of geology or elsewhere. His services have been given to the Survey without compensation, the Survey only repaying his actual expenses during the time that he has spent in supervising, in the field, the work of Dr. Weidman and Dr. Buckley.

B. *Building Stone Report.*—The preparation of the report on building stones was commenced by Dr. E. R. Buckley about the middle of June, 1897. The following five months were devoted almost exclusively to an examination of the more important quarries in various parts of the state. All quarries located in areas where there were possibilities of securing good building stone were visited. The character of the stone as it occurred in the quarry, the history of its development, and present condition were all carefully noted. The facilities which were at hand for quarrying were considered, and estimates of the possibilities of the future development of the quarry were made. Where the company owning the quarry possessed suitable facilities for cutting and dressing samples of the stone, requests were made that samples 8 inches x 8 inches x 8 inches be dressed

and sent to the Survey. It was also requested from each of the quarries that either two-inch cubes or rough samples of the stone, for testing purposes, be forwarded at the earliest convenience.

In nearly all cases either two-inch cubes or rough samples of the stone were sent in for testing, and in many cases dressed samples were provided. Nearly fifty quarries sent samples to the Survey for testing and for exhibition in the laboratory of the Survey. These samples may be seen by any one interested in the building stones of the state at any time, by calling at the rooms of the Survey.

The last month of 1897, and the first two months of 1898, were devoted to testing the rough samples of stone which were sent to the Survey during the preceding summer and fall. The succeeding ten months have been devoted to the compilation of the results of the field examination and the laboratory tests.

The report, as it now appears as Bulletin No. IV of the Survey, consists essentially of three parts: a consideration of the building stones as they occur in the quarries, a discussion of the physical, chemical, and mineralogical properties of the stone, and a consideration of the manner in which the stone, which has already been used from these quarries, has stood the requirements of good building and monumental stone.

The first part of the report comprises a general discussion of the demands and uses of stone, the necessary considerations in the selection of stone, and the means of determining the value of stone for building or other economic purposes. The second part of the report comprises a brief geological history of Wisconsin, and the description of the areas and individual quarries from which building and monumental stones have been lately exploited. The last chapter of Part 2 is a discussion of the physical tests, and embodies a series of tables showing the results of all the physical tests made on the different stones from Wisconsin. Accompanying these tables are several tables which give the results of tests on building stones from other states; inserted for comparison. An examination of these tables is very interesting in showing that Wisconsin not only has the strongest known granite and limestone, but also possesses building materials

which are equal if not superior in durability to others now used in the state and imported from other parts of the country.

The great variety of granites which are to be found in different parts of the state indicates that in the future monumental stones used in this state will be largely obtained from the home quarries. Many of the granites now have an enviable reputation in the markets of the United States.

The Lake Superior brownstone is well adapted for building or other constructional purposes, and will be used probably much more largely in the future than it is at present.

The limestones which are quarried from the Niagara formation in the eastern part of the state, and those quarried from the Trenton in the vicinity of Green Bay, and the Lower Magnesian limestone in the western part of the state are well adapted to most purposes of construction, and will, in the future, as in the past, supply a very large part of the demand for stone for constructional purposes.

In this report an attempt has been made to give our readers an idea of the color and texture of the more important kinds of granite and brownstone now quarried in the state, by the insertion of colored lithographs, which accompany the description of the granite and brownstone from the different quarries. These lithographs are very accurate reproductions of the polished faces of the granite, and the sawed faces of the brownstone. They should prove valuable to architects and builders in selecting stone, as well as in showing the people in general the variety and exceptional beauty of the building and ornamental stones of Wisconsin.

The report also contains numerous half-tone cuts of the more important buildings and monuments constructed out of Wisconsin stone. These are intended to convey to the reader, in a limited way, an idea of the extent to which Wisconsin stone has been used and the pleasing architectural effects produced thereby. In the back part of the report numerous plates are inserted which illustrate the results of a number of the laboratory tests. It is thought that they will prove of service in showing the manner in which the different kinds of stone are affected when subjected either to more than the ultimate strength, or to ex-

tremely high temperatures. Accompanying these plates is a series of photographs of thin sections of the different kinds of stone, as seen through the microscope. These plates are important in showing the shape of the individual grains which make up the rock, and the manner in which they are united to their neighbors. The strength and durability of the rock depend very largely upon these facts.

A general map of Wisconsin, showing the distribution of the different kinds of rock and the location of the more important quarries, will be of value to quarrymen and other parties interested in the exploitation of the stone for economic purposes. The sketch maps, which are found throughout the report, locate more definitely the different quarries, and show more accurately the distribution of the formations in the areas outlined.

In general, it is thought the report will modify the conception which the people of this and neighboring states have of the importance of the stone industry of Wisconsin. It is very evident that few people know how extensive the valuable building and ornamental stones of Wisconsin are, and it is hoped that this report will result in a more extensive development of the stone industry of this state.

C. Dr. Weidman spent the winter in platting and working up the results of his last summer's field work in the region about Wausau and Merrill, and in the preparation of a bulletin on The Volcanic Rocks of the Fox River Valley, the field work for which was done before he became assistant on the Survey. He has spent the summer in completing the field work in the region above named. This area was left almost untouched by the first geological Survey, and is one of great geological complexity, as well as a region whose geology afforded some hope of economic results. As yet, no discoveries of economic importance have been made, and the time has been devoted to working out the very difficult geological structure of this region.

The Wausau district includes a region with a radius of 25 or 30 miles about the city of Wausau. It is proposed to make a thorough geological survey of the district, requiring detailed field-work on the whole area considered, and a careful study of the facts. With this purpose in view, field-work in this dis-

trict, under the direction of the Survey, was begun the latter part of June, 1897. Previous to this, however, about two months of field-work had been done in the near vicinity of Wausau, by E. R. Buckley and S. Weidman, in the autumn of 1895 and the spring of 1896, under the direction of the geological department of the University of Wisconsin.

The field-work of the former state geological Survey in this region was of a very general nature. Prof. R. D. Irving spent a few days in the vicinity of Wausau, in the summer of 1874, and his notes and specimens were supplemented by those of A. C. Clark, taken in 1879. The observations of Irving and Clark were confined principally to traversing the Wisconsin river and two of its tributaries, the Eau Claire and the Big Rib rivers.

Within the last 20 or 25 years, or during the time which has elapsed since the former general survey was made, the region about Wausau, in Marathon and Lincoln counties, as in many parts of north-central Wisconsin, has become thickly settled with prosperous farmers. Numerous and well traveled roads net the country, and the clearing of the land into farms has exposed to view many outcrops of rock that would have been difficult, and even impossible to discover in the formerly wooded country. In the making of wells at the farm houses, the solid crystalline rock is met with at various depths below the surface, and thus the wells furnish an important means to the geologist in gathering information in the field. The settlement of the rural districts, therefore, has not only facilitated work in the field, but has also brought to light many facts of geology that were formerly hidden. The principal means of travel in the prosecution of the field study is the bicycle, and it has been found that by traversing every road in the district by wheel, and examining the rock from the wells and along the streams, the areal distribution of the different kinds of rock can be worked out with sufficient accuracy, at a small cost and with considerable rapidity.

The part of the Wausau district in which the field work is almost completed covers about 900 square miles in Marathon county, and about 100 square miles in Lincoln county. The rocks of this district are of pre-Cambrian age, and most of the

formations are intricately folded, and all very much metamorphosed. The different formations of these old crystalline rocks have been outlined, their areal distribution indicated on the maps, and their relative age and relations to one another has been learned.

In carrying on the field work, all the outcrops of rock are visited and specimens collected, which are described in field note-books, and located upon maps. Something over 1,500 specimens from different outcrops have already been collected in the district. From about 500 of the specimens thus collected thin sections have been made, for the purpose of studying the rocks under the microscope, to determine their mineral composition and texture. It is also important that chemical analyses of many of the rocks be made. By combining the detailed field study of the different rock formations and the laboratory study of the rock by the microscope and chemical analysis, the geology can be worked out on a firm scientific basis.

It is in this connection that the reliance of mining geology and the economic development of the mineral resources of a region upon the collection and discussion of the facts of geology from a purely scientific standpoint can best be exemplified. It has been estimated that about \$75,000 have been invested in the mining industry about Wausau. This expenditure has been made without any adequate knowledge of the nature and origin of ores, or of the nature and relations of the rock formations on which this large amount has been spent. It is safe to say that nearly all of the amount invested represents just so much loss of labor to the state. The numerous and expensive abandoned mines and test-pits that one meets with in the Wausau district are constant reminders of the needless expenditures on the part of individuals, which a scientific examination of the region by a geological survey would have prevented.

Dr. Weidman's report on the Volcanic Rocks is now wholly in type, and will be issued very soon. It is a careful scientific study of the rocks so extensively quarried at Berlin, Waushara, and Utley.

D. The third important piece of work done during the past year has been on the lakes in the southern and southeastern part

of the state. These lakes are the most valuable economic resource of this region of the state, which can be investigated by this Survey, and their study has seemed to me one of the most important subjects which the Survey could undertake. The state is also spending on these lakes, through the Commissioners of Fisheries, considerable sums of money annually, and accurate information of them is needed, for this reason, if for no other. In beginning the work, I found that there was very little accurate knowledge regarding the lakes, and that even the people residing near them knew very little regarding their depth or other characteristics below the surface. With the approbation of the Commission, I determined last winter to begin a series of soundings through the ice, with the view of obtaining a more accurate knowledge of the area and topography of the lakes than we have hitherto had. Mr. H. M. Trippe spent about six weeks of the past winter in such work, making a survey of some 24 lakes, including the more important lakes from Elkhart lake on the north to Lake Geneva on the south. His field notes were platted, and maps were drawn by Prof. L. S. Smith, who has had charge of the hydrography, and has devoted much time without pay to the supervision of the work of field parties.

A considerable sum of money had been reserved for field work by Dr. Buckley, who had expected to extend his field observations during the summer, in addition to the preparation of his report. When it became apparent that the time at Dr. Buckley's disposal would not permit this additional field work, I directed Prof. Smith to extend this lake survey to the Wau-paca region, and also to complete some points in the survey of the other lakes, in which the maps proved to be deficient, using part of the funds for this purpose, not needed by Dr. Buckley.

This work was especially necessary from the fact that the maps of the lakes, contained in county atlases or government plats, are, in many cases, grossly imperfect, so that it was almost impossible to make the results of Mr. Trippe's survey fit on the outlines of the lakes, as obtained from these sources. As a result of this work, a large number of lakes have been surveyed, including the following list:

Chain of lakes, Waupaca.

Elkhart lake.

The lakes in the neighborhood of Oconomowoc and Waukesha, including Lac la Belle, Fowler, Oconomowoc, Okauchee, North, Pine, Beaver, Nagowicka, Upper and Lower Nashotah, Upper and Lower Nemahbin, Crooked, Otis, Genesee, Silver, and Pewaukee lakes.

Lake Beulah, Booth's and East Troy lakes.

The Lauderdale lakes.

Delavan lake.

Lake Geneva.

Lake Mendota.

Green lake.

These lakes have been surveyed accurately enough to give ten-foot contour maps. Through the aid of the Department of Engineering in the University of Wisconsin, a survey of Lake Mendota has been completed sufficiently accurate to permit five-foot contours, and the Geological Survey, through Professor Marsh, of Ripon, has completed a survey of Green lake. This is mapped on twenty-foot contours, the slopes being so steep that a smaller interval is not advisable. Altogether, if we enumerate the single lakes at Waupaca, Lake Beulah, and Lauderdale, we have surveyed 50 lakes.

It will be seen that we are now in possession of reasonably accurate hydrographic data regarding most of the more important deeper lakes of southeastern Wisconsin, with the exception of three of those about Madison.

I have not begun a similar survey of the more shallow lakes, such as Lakes Puckaway and Koshkonong; nor have I been able to begin work on Lake Winnebago, on account of its great size and the consequent expense attending the survey. During the coming winter I hope to make a survey of the Madison lakes through the ice, but I fear that the money at the disposal of the Survey will not permit us to begin work on Lake Winnebago. This lake, at once the largest and most productive in fish of the inland lakes of the state, deserves to be carefully studied and I greatly regret that the funds at the disposal of the Survey have compelled us to restrict our work hitherto to

the smaller lakes. The Survey should undertake a thorough survey of this lake, if the means are at our disposal, and also should extend it to the remaining lakes of southeastern Wisconsin, which by size, depth, or economic importance demand attention.

One of the maps of the lakes has been issued in a small edition, that of Lake Geneva. The maps of the other lakes are all of them drawn in pencil, and most of them inked, so that they will be ready for publication in a very short time.

These maps will serve as a basis for a very large amount of work in coming years. It is my hope and expectation to issue an illustrated bulletin, descriptive of the topography, etc., of these lakes, during the coming year, in which these maps will be used. The smaller lakes will be engraved for such publication on a larger scale than that which is employed in the general sheets which we are now issuing. The maps will also guide us in work of another character, of which I shall speak in a later part of the report.

E. To my great regret, Prof. Geo. L. Collie, of Beloit, was unable to continue field work on the physical geography of the southern part of the state during the past season. He has, however, completed and sent in the first draft of a general account of the physical geography of this region, which will doubtless be completed and published during the coming season, though it may be necessary to give some more time to that work in order to make the report satisfactory to him.

F. Prof. D. P. Nicholson, of Lawrence University, spent about a month in field work on the lake region of Northern Wisconsin. This triangular region in the north part of the state, whose center is not far from Minocqua, offers extremely interesting geological problems, of which Prof. Nicholson has undertaken the survey. The work of this season was merely preliminary to a more extended study of the district during next summer.

G. Prof. L. S. Cheney, of the University of Wisconsin, spent the summer in field work, preliminary to the preparation of an illustrated bulletin on the structure and distribution of the forest trees of the state. He has completed the necessary

field work for this paper, and expects to submit his report during the coming season.

H. Prof. C. Dwight Marsh, of Ripon, has devoted some time to the hydrographic survey of Green lake, and has already collected material for a study of the biology of the crustacea of some of the lakes. The amount of field work done by Prof. Marsh has, however, been greatly reduced by the fact that much of his summer vacation was spent in teaching.

I. Prof. R. D. Salisbury, of the University of Chicago, has prepared a somewhat elaborate bulletin on the physical geography and geology of the Dells and of Devils lake. For the payment of field expenses in preparing such bulletin, the sum of \$400.00 was appropriated by the Survey, the money to be paid when the manuscript of the report was submitted. Prof. Salisbury has transmitted his report to me and I shall expect to publish it during the coming year.

J. The Survey has made a not inconsiderable demand on my own time during the past year, and my work as director has seriously interfered with the scientific investigations which I had hoped to conduct. It has been necessary for me to revise the manuscripts of four publications, and to read proof on the two that have been issued, and of the others, as far as they are already in print. This work, together with the general supervision of the field parties and the office work, has occupied a very large share of the time which I could devote to the work of the Survey. I have, however, carried on regular observations of the temperature of the lakes at Madison, and in the neighborhood of Oconomowoc, with the view of publishing a paper on this important subject, and have also collected the material for the study of the lower life, both plant and vegetable, found at different depths of the open waters of these lakes. This material I have not yet been able to touch, but shall hope to work it up during the coming winter, and to complete the paper on Lake Temperatures. I have been visiting the Oconomowoc lakes at regular intervals since last spring; have made one trip to Lake Geneva and other lakes in that region; and I have spent about ten days in a trip to the northern part of the state, accompanying Prof. Nicholson in his work on the lake region for

about a week, and continuing my own field work there. It was a great disappointment to me not to be able to spend considerably more time among the northern lakes, but I was obliged to postpone detailed work in that region until another season.

IV. PUBLICATIONS OF THE SURVEY.

The commission determined to issue its reports as independent bulletins, and to print these in three series. The first, an economic series, which treats of subjects of economic importance; the second, the scientific series, which discusses matters of scientific, rather than immediately practical interest; and third, an educational series, which contains papers whose main object is to extend and popularize knowledge, and especially to present it in such form as to make it useful in the educational institutions of the state. Two bulletins have thus far appeared, the first of the economic series, and the first of the scientific series. The first economic bulletin is entitled *On the Forestry Conditions of Northern Wisconsin*, by F. Roth, Special Agent of the United States Department of Agriculture, pp. 78, one map. This bulletin was prepared at the request of the State Board of Forestry. On the joint request of that Board and this Survey, Mr. Roth was detailed by the Department of Agriculture to make the survey and prepare the report, the Survey bearing his expenses and the Department of Agriculture paying his salary. Five thousand copies of this report were printed, of which 2,000 were for the use of the Forestry Commission, the remainder being for the use of the Survey.

Mr. Roth's bulletin contains the result of observations made rapidly during a period of three months and extending over the entire northern part of Wisconsin. It is therefore necessarily incomplete in its detail, but it represents in a singularly attractive and convincing manner the present condition of our forests, showing the amount to which they have already been exploited, giving estimates of the amount of timber still remaining, and especially calling attention to the enormous loss of wealth which the state has suffered through carelessness, resulting in destruction by fire. It gives also for the first time

some idea of the length of time during which our lumber industries may be expected to continue on their present basis and affords some indication of the changes in the character and direction of these industries, which will be necessary as the supply of conifers in the state is exhausted and the lumber industries must turn to the hard woods. It gives also valuable suggestions regarding the possibilities and cost of reforesting the waste lands of the state. I trust that the report will be of service to the Forestry Commission and to the coming Legislature in attempting to formulate some rational measures for the preservation and restoration of our forests.

The second bulletin, the first of the scientific series, is entitled *On the Habits and Instincts of the Solitary Wasps*, by Geo. W. and E. G. Peckham. This paper was first sent to me to be published in the *Transactions of the Wisconsin Academy of Sciences, Arts, and Letters*, but the size of the paper, and its scientific value, led me to advise the Commissioners to request its publication as a bulletin of the Survey. Of course, no money was expended by the Survey in the field work for the preparation of the report, and the paper was to be published by the state in any event, either as a part of the volume of the *Transactions of the Academy*, or in the form in which it actually appeared. The Director felt that the publication of so important a paper as a bulletin of the Survey early in its history would give the Survey a standing among scientific men which it would be slow to reach if it was necessary to wait for the preparation of reports by the assistants of the Survey, especially since the appropriation made to the Survey was in such large measure devoted to economic investigations. I need only say that my expectations have been fulfilled, and that the bulletin is recognized as having very high scientific value as well as great popular interest.

The publication of both of these bulletins was subject to delays which ordinarily attend printing, especially when the series published is new. The manuscript was sent to the printers early in the current year, but it was not until August that the work was finally completed. Delays of various kinds interposed, without fault of anyone, so that the printing and proof

reading dragged out over an unusually long time. Many questions arose which had to be referred to the Printing Commissioners, as well as to myself, and the constant necessity for reference back and forth added to the delays. This printing detained me in Madison during most of the early part of the summer. I found that my absence from the city ordinarily involved stopping the work on these bulletins, as unforeseen questions would arise, which could not be settled in my absence. It has been owing to this fact that my field work during the summer was less than I expected to do.

These two bulletins have been distributed together to members of the Legislature, scientific societies, and to various individuals throughout the state. The larger part of the edition has already been sent out, but a sufficient number of copies remain to supply any demand which is likely to arise during the next year, or possibly more.

There has just been printed by the Survey a small edition of the hydrographic map of Lake Geneva. This is the first of the maps of this character to be issued. The map of the Oconomowoc district, including some 16 lakes, is now ready for the printer, and will be followed by the maps of the other lakes in rapid succession.

I ought not to close this section of my report without a warm recognition of the aid given me by the Commissioners of Public Printing and by the Printing Clerk in the publication of these reports.

V. PLANS FOR THE FUTURE.

The Survey has received from the state for the payment of salaries and expenses the sum of \$5,000 per year. I think that the money has been wisely expended on the whole. Certainly, an amount of work has been accomplished quite beyond what I had expected from so small a sum of money. It is obvious, however, that the sum is so small that no thorough-going survey of the state can be completed within a reasonable time, unless the income of the Survey is greatly increased. In geology, for example, the Survey has kept one man in the field and he has been able to cover perhaps a thousand square miles of

that region of the state which has never been accurately studied. There are nearly 25,000 square miles which are in this condition, and unless a much larger force can be put to work, it will require many years to complete the survey of the geology of the northern part of the state alone. The Survey ought to be able to put into the field, not one man, but at least one party of considerable size, and it would be far better if two such parties could be kept in the field.

In addition to these general considerations there are special reasons why the geological work of the Survey should be extended. The interest in copper mining in Douglas county has greatly developed within the past year, and undoubtedly a large amount of prospecting will be done in that region, in the immediate future. The geology of this region ought, therefore, to be carefully studied at the earliest practicable date. It is not possible for a geological survey to undertake the work of the prospector, and that work should not be attempted by the Survey, but the geologist can aid the prospector by indicating the regions where prospecting is most likely to reach successful results, and also by the equally important service of indicating the areas within which it is useless, or nearly useless, to prospect. As indicated earlier in this report, very large sums of money have been spent in the area around Wausau and Merrill in unsuccessful prospecting in places where a competent geologist would have seen that no mine could be found. The sums of money so wasted in that small region are more than enough to pay the entire expense of a vigorous geological survey for many years. (See p. 16.)

While I desire to extend the work of the Survey to Douglas county, I should be very sorry to abandon the extension of the Survey in the region already undertaken in Marathon county, and I would recommend that two geological parties be kept in the field during the coming seasons, and, if practicable, be maintained until the geology of the northern part of the state has been carefully worked out. It will require about \$2,500 per year to maintain each of these parties, or a total of \$5,000 annually.

In the direction of economic geology, the most important

topic to be treated, next to that of the building stones, is that of the kaolins, the clays, and the clay industries of the state. This, however, is a more difficult subject to work out than that of the building stones, because a large amount of chemical and other scientific investigation is necessary, and also because the industries themselves are so numerous and scattered all over the state. It is necessary also that the investigation, when once undertaken, should be carried on vigorously and rapidly so that a report may be issued within a reasonable time, and while the statistics collected are still fresh. If the work on the clays is to be carried on in this manner, it will require an expenditure of about \$3,500 per year for at least two years, in order that a report may be properly prepared.

Another subject which should be carefully investigated is the suitability of the rocks in the southern part of the state for use as road material. The subject of "good roads" is now prominently before the people, and undoubtedly the construction of such roads on a large scale will be undertaken within a very few years. When the building of these roads begins it will be a matter of great importance to the communities undertaking their construction to know exactly the relative value as road material of the various classes of rock which are available. The investigation of this subject will require considerable time and the expenditure of a moderate sum of money. Suitable machinery should be purchased for conducting the experiments, and \$1,000-\$1,500 expended annually in conducting the tests. The knowledge of our rocks which will thus be acquired will undoubtedly be needed before the Survey can furnish the information even though the study is begun at once.

The third subject of economic interest, upon which work should be undertaken, is the study of the natural waters, especially those of the southern part of the state. Questions of water supply are now pressing upon all of our larger communities and many of the smaller ones in this region, and the communities should have the guidance which would be afforded by a careful survey of the actual and possible sources of water supply. Careful sanitary, chemical, and biological analyses should be made of the waters of lakes and streams of the south-

ern part of the state, and also of the artesian waters, the spring waters, etc. This Survey should also gauge the flow of streams which may be drawn on as sources of water supply, and bring together all of the information which is needed by the state in this direction. The lakes should also be carefully studied with reference to their possibilities in regard to fish culture. A beginning of this study has been made by the preparation of hydrographic maps of the more important lakes of the southern part of the state, which will serve as a basis for the further investigation of these waters. From every point of view, the waters of the southern part of the state constitute that natural resource whose investigation is most necessary at the present time; the resource from which the citizens of the state are at present receiving large returns, and from which still larger returns will be received in the future.

In order to carry on this investigation, it will be necessary to employ the services of a chemist and biologist, as well as several assistants. The state of Illinois is devoting to this general line of investigation of waters the sum of more than \$5,000 annually, and an equal sum should be spent in this state.

These three lines of work, together with topography, constitute the most important directions in which the work of the Survey should be turned. There are other matters, however, of smaller importance, which should not be neglected. I am constantly appealed to for information regarding the mining industries of the state. I am, however, quite unable to answer these inquiries, since there is no means provided by which the statistics of mining in this state can be collected. The collection and collation of such statistics would occupy a portion of the time of a clerk or similar person and would involve expense which the Survey has at present no means of meeting. The work could well be undertaken, however, in connection with some of the larger subjects of investigation.

Another topic which the Survey should undertake, is the preparation of the history of the exploitation of the great forests of the state. Mr. Roth's bulletin, which has been published by the Survey, gives a sketch of the present condition of the forests, but they have been a prime source of wealth to the

state during the past half century. It is still possible to obtain the history of the forests and of their exploitation, but the time will soon be past when that history can be obtained. The treatment of the subject demands the employment of scientific methods, as well as historical, and the work belongs pre-eminently to this Survey. I should be glad to be able to begin at once the collection of data for such a history.

All of these subjects are of economic importance, or immediately allied to subjects which are economic. To investigations of this sort a major part of the money appropriated by the state for the Survey must always be devoted as it has been in the past; but the Survey would fail to perform its duty to the state if it did not regard a diffusion of the knowledge of nature as one of its main functions. It should be the duty of the Survey to prepare reports on the plants and animals of the state, looked at both from a scientific and popular point of view; to report on the physical geography, geology, and paleontology. In many cases the field work will have to be done almost or wholly without compensation, but the Survey should be ready to aid such studies when of sufficient importance by the payment of expenses, and in similar ways, and should also be ready to publish the results of such investigations when completed. Nor will the Survey complete its duty unless a reasonable proportion of the money granted by the state is devoted to furthering these investigations, which may seem not to have economic value at once, but which experience has shown are sure to become of value, not merely to the intellectual, but to the material progress of the state.

There is another object to which a considerable sum of money should be devoted, which seems to me of importance equal to any of those which I have named. I refer to the matter of topography. In all civilized countries of the world, a carefully prepared topographic map is regarded as of first importance, and to the preparation of such a map large sums of money are devoted by all European countries, and by the more advanced states of the Union. Such maps have been completed in Massachusetts, New Jersey, and Connecticut, and are in progress in New York and in other states. The United States govern-

ment, acting through the Geological Survey, will appropriate to the subject of topography a sum equal to that which is devoted to it by the state. A small portion of the state has already been surveyed by the U. S. G. S., and a small amount of work has been done in the region of the Dells and Devils lake during the past season. The Survey ought to be able to appropriate to this subject at least \$2,500 per year, which, with an equal sum from the national government, would enable the preparation of a topographical map to go on steadily, if not so rapidly as we could wish. I have found some persons reluctant to believe that topography really possesses the great importance which is attributed to it, but in no part of the world where such maps have been made are they regarded as having anything less than the greatest possible value. I am sure that as soon as such work can be begun and carried out sufficiently to show the value of the survey to the people, there will be no further doubt in the minds of any of the real value of such work. In my own judgment the time is ripe for a careful survey of the southern part of hte state, and the survey will hardly reach the northern region in advance of the progress of settlement which will make its extension necessary to that region. In the progress of the survey of the lakes of the southern part of the state during the past year, the gross inaccuracies with which the county and other maps are filled have been strikingly impressed upon me. They are certainly not worthy of a country which regards itself as civilized.

If all of these plans are carried out, even on a small scale, a sum of not less than \$17,000 per year will be necessary.

Respectfully submitted,

E. A. BIRGE,
Superintendent.

FINANCIAL REPORT, FROM SECRETARY OF STATE.

GEOLOGICAL SURVEY.

Warrants issued June, 1897—Sept. 30, 1898.

Buckley, E. R., salary	\$66 66
Buckley, E. R., expenses	152 66
Buckley, E. R., mdse	20 05
Cheney, L. S., expenses	137 06
Buckley, E. R., expenses	45 39
Buckley, E. R., expenses	109 85
Buckley, E. R., salary	66 67
Marsh, D. C., services	56 00
Collie, G. L., services	105 00
Collie, G. L., expenses	7 40
Weidman, S., expenses	71 87
Weidman, S., salary	66 66
Pickarts & Nicodemus, mdse	35 00
Birge, E. A., expenses	53 45
Buckley, E. R., expenses	77 67
Buckley, E. R., salary	66 66
Cheney, L. S., expenses	51 93
Gordon, J. C., services	2 77
Marsh, C. D., expenses	25 70
Marsh, C. D., expenses	9 09
Hollister's Pharmacy, mdse	15 49
Haack, Wm., mdse	21 44
Nicholson, D. O., services and expenses	52 50
Roth, F., expenses	103 20
Weidman, S., salary	84 06
Weidman, S., expenses	54 06
Buckley, E. R., expenses	54 94
Buckley, E. R., expenses	73 84
Buckley, E. R., salary	66 67
Roth, F., expenses	111 40
Weidman, S., expenses	38 31
Weidman, S., salary	66 66
Van Hise, expenses	12 23
Ritchie, E. S., & Sons, mdse	61 75
Cheney, L. S., expenses	14 85
Nicholson, D. P., expenses	9 37
Collie, G. L., expenses	25 25
Weidman, S., expenses	49 46
Weidman, S., salary	66 66
Buckley, E. R., salary	100 00
Buckley, E. R., expenses	46 52
Weidman, S., salary	66 66
Weidman, S., expenses for mdse	21 60
Roth F., expenses	195 65
Collie G. L., mdse	37 00
Emerton, J. H., services	60 00
Ohm's Son, Fred C., services	22 90
Weidman, S., salary	66 66
Buckley, E. R., salary	66 66
Coombs, E. C., services	42 00
Birge, E. A., expenses	4 75
Birge, E. A., expenses	56 97

Buckley, E. R., expenses.....	\$17 61
Buckley, E. R., salary.....	66 67
Chamberlain, P. F., services.....	12 50
Dretzgen Co., Eugene, services.....	8 25
Ganthie, W. F., board for men.....	13 30
Healy, P., labor.....	17 00
Hartmann, P., services.....	2 19
Hogg, J. R., services.....	19 50
Johnson, O., labor.....	26 53
Kratsch, H., services.....	11 60
Lottes, W. G., services.....	2 50
Lottes, W. G., services.....	6 00
Lewis, A. W., services.....	10 00
MacGregor, W. F., services.....	21 00
Mutchler, I., services and mdse.....	17 25
Mutchler, C. B., services.....	2 50
Ohms' Son, Fred C., mdse.....	84 80
Ohms' Son, Fred C., services.....	12 40
Schubert & Son, services.....	5 80
Smith, L. S., expenses.....	20 65
Trippe, H. M., labor.....	26 88
Thorgeson, C. T., services.....	13 12
Williams, L. A., services.....	15 90
Weidman, S., salary.....	66 66
Buckley, E. R., salary.....	66 66
Coombs, E. C., services.....	55 00
Keat, J., expenses.....	15 00
McCabe, J., expenses.....	12 00
Weidman, S., salary.....	66 66
Marsh, C. D., expenses.....	41 15
Marsh, C. D., services.....	14 90
Trippe, H. M., expenses.....	86 01
Trippe, H. M., services.....	70 00
Trippe, H. M., services.....	174 97
Smith, L. S., services and mdse.....	35 90
Buckley, E. R., salary.....	66 66
Buckley, E. R., expenses.....	12 30
Nommensen, R. A., services.....	6 25
Ohms' Son, Fred C., services.....	2 70
Stone, M. B., services.....	2 40
Smith, W. N., services.....	29 87
Weidman, S., salary.....	66 66
Buckley, E. R., salary.....	66 66
Denniston, F. K., services.....	63 00
Gerlach, F. A., services.....	11 40
Gerlach, F. A., services.....	10 20
Harper, B., services.....	19 60
Klug, L. J., services.....	6 75
MacGregor, W. F., services.....	4 40
Riley, E. F., services.....	20 00
Smith, L. S., services.....	40 70
Smith, W. M., services.....	24 25
Weidman, S., salary.....	66 66
Buckley, E. R., salary.....	66 67
Buckley, E. R., expenses.....	52 10
Dow, L. A., services.....	16 12
Denniston, F. K., services.....	35 00
Green, H. J., services.....	15 00
Gerlach, T. A., services.....	3 80
Nommensen, R. A., services.....	1 00
Smith, W. N.....	6 50

Smith, L. S., services	\$33 40
Weidman, S., salary	66 66
Weidman, S., expenses	39 95
Buckley, E. R., salary and expenses	87 79
Weidman, S., salary	66 66
Smith, L. S., services	31 70
Ballauf, D., mdse	12 00
Gordon, J. C., services	6 45
Buckley, E. R., salary and expenses	78 37
Smith, L. S., services and expenses	66 45
Weidman, S., expenses	50 45
Wiedman, S., salary	66 67
Birge, E. A., expenses	33 71
Cheney, L. S., expenses	66 63
Marsh, C. W., expenses	29 15
Nicholson D. P., services	25 43
Smith, W. N., services	14 63
Smith, W. N., services	24 13
Birge, E. A., expenses	69 60
Buckley, E. R., salary	66 66
Daniells, W. W., services	203 10
Cheney, L. S., services	227 25
Denniston, F. K., services	14 10
Denniston, F. K., services	62 25
Mills, L. W., services	5 00
Marsh, C. D., expenses	34 40
Nicholson, D. P., services and expenses	84 84
Ritchie, E., Sr., Sons, mdse	12 75
Smith, L. S., services and expenses	124 49
Smith, L. S., expenses and services	128 74
Tension Envelope Co., mdse	21 00
Weidman, S., salary	66 65
Weidman, S., expenses	47 54
Total to September 30, 1898	\$6,821 16



REPORT

OF THE

CHIEF INSPECTOR

FOR THE

Department of Public Lands

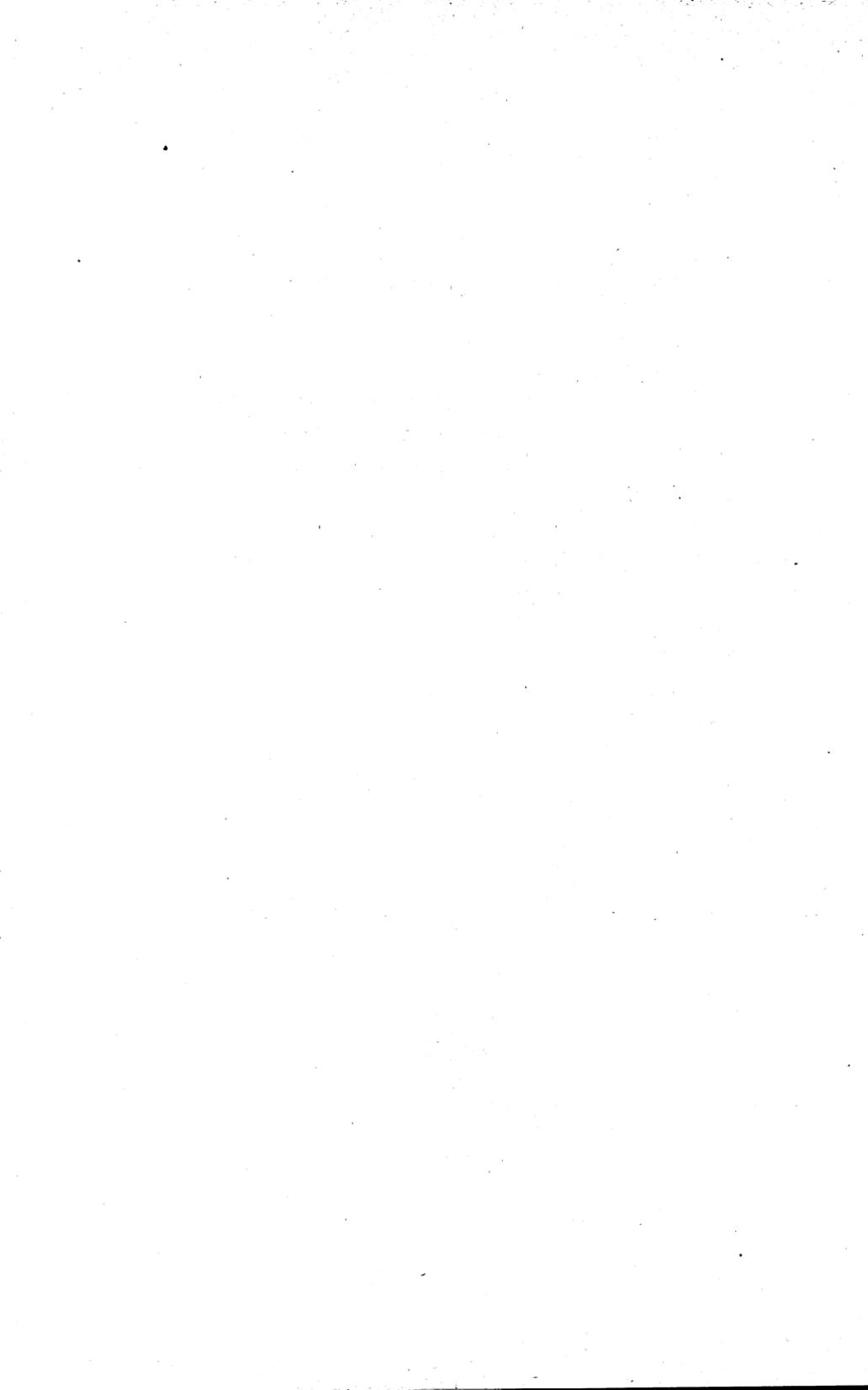
OF THE

STATE OF WISCONSIN,

For four years ending December 30, 1898.



MADISON, WIS.:
DEMOCRAT PRINTING COMPANY, STATE PRINTER
1899



LETTER OF TRANSMITTAL.

STATE OF WISCONSIN,
Department of Public Lands,
Madison, Wis., December 30, 1898.

HON. EDWARD SCOFIELD,

Governor of Wisconsin.

SIR—We have the honor to transmit herewith, for your consideration, the report of E. G. Mullen, Chief Inspector of Lands, covering the operations of the Department of Public Lands relative to trespass on public lands, swamp lands in Indian Reservations, and the efforts made for a settlement of the state claim for swamp land indemnity during the past four years.

We desire, in this connection, to express our appreciation of the very efficient and valuable services rendered by Mr. Mullen to the state of Wisconsin.

Very respectfully,

HENRY CASSON,

Secretary of State.

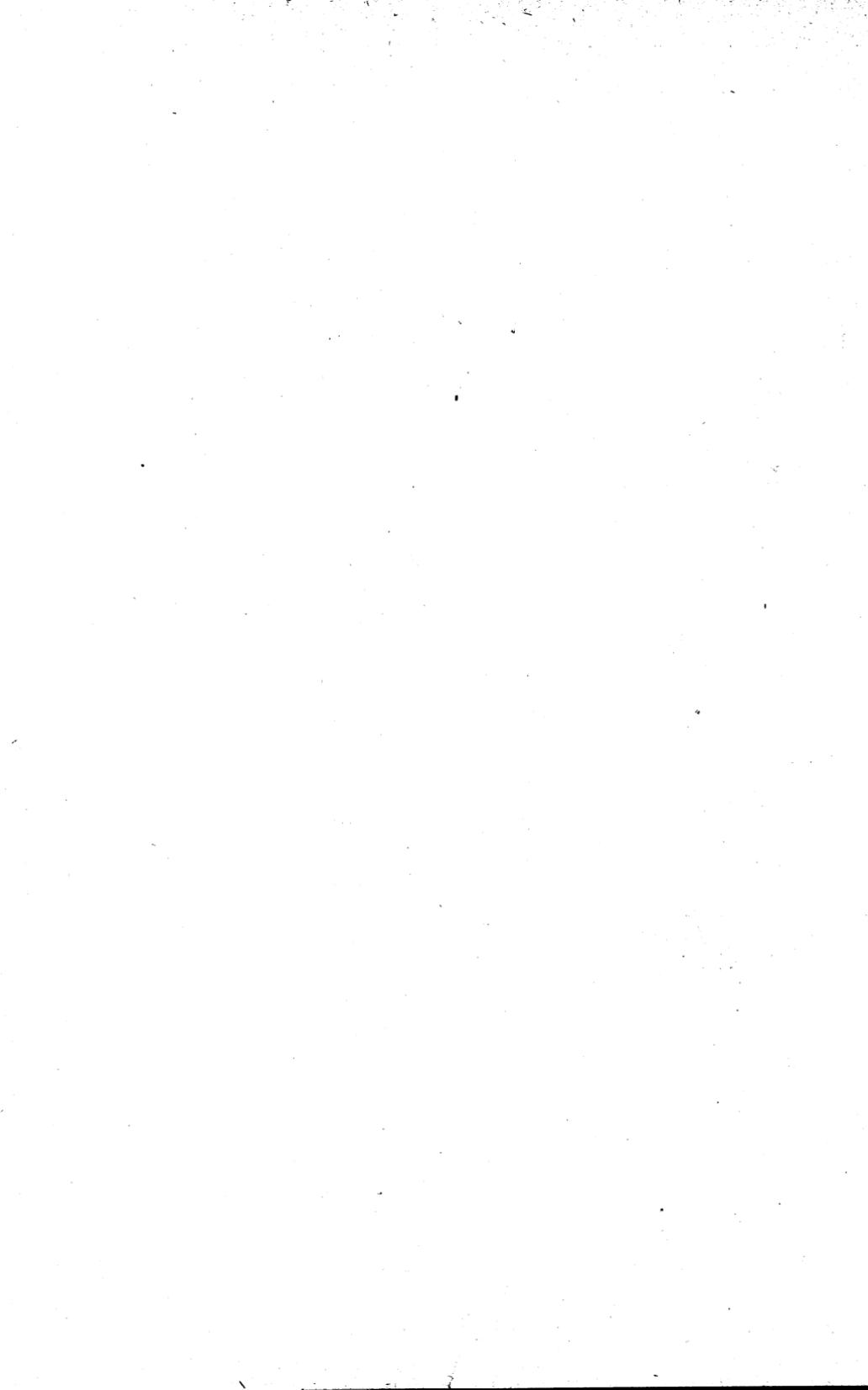
SEWELL A. PETERSON,

State Treasurer.

W. H. MYLREA,

Attorney General.

Commissioners of Public Lands.



REPORT OF CHIEF INSPECTOR OF LANDS.

Madison, Wis., December 28, 1898.

The Honorable Commissioners of the Public Lands.

SIRS:—I have the honor of submitting the following report on the present status of various matters which, by your direction, have been given attention:

TRESPASS ON THE PUBLIC LANDS.

The investigation of trespass on the Public Lands covers one hundred and four cases, of which forty-four have been settled and the sum of \$22,099.11 collected therefor and deposited in the State Treasury. There remains to be disposed of sixty cases, nearly all of which have been fully investigated and are in process of settlement. In nearly all of these cases the state will receive the full value of the timber cut and removed from the state lands. During the four years next preceding the present administration there were settled seven cases for the sum of \$2,278.03.

It is a matter for congratulation that owing to the care given to the Public Lands during the four years of your administration trespassing on the lands of the state has not been popular or profitable and has almost, if not entirely, ceased. This is evidenced by the fact that up to this time there has been discovered but one trespass (outside of Indian Reservations) made during the last logging season, and that was made through an error in running lines. The trespasser reported the matter and asked to make a settlement. I believe the lumbermen are in hearty accord with the present policy of the state in this matter, as they have, when called on, cheerfully and promptly given any information requested, notwithstanding that in many cases it has entailed upon them payment for logs for which they had already paid the trespasser.

TRESPASS ON SWAMP LANDS IN THE LAC DU FLAMBEAU
INDIAN RESERVATION.

An investigation into the logging operations on this reservation made in 1897 disclosed the fact that there had been cut by J. H. Cushway & Company, contractors, from school and swamp lands during the logging season of 1896-7 pine and other valuable timber to the amount of 4,636,260 feet. The stumpage value of this timber, based on the contract price paid to the Indians, was \$12,265.94. This timber was cut on authority granted by the Honorable Secretary of the Interior on the representation made to him that it was for the improvement of various buildings on the reservation.

When this matter had been carefully looked into, both in Wisconsin and Washington, it was presented by Governor Scofield to the Honorable John C. Spooner, United States Senator from Wisconsin, for such action as in his opinion would protect the interests of the state. It is only necessary to add that he decided promptly that the state's interests were being sacrificed, presented the matter to the Honorable Secretary of the Interior, convinced him of the wrong being done under a misapprehension of the rights of the state and procured an order revoking all former authorities for cutting timber on these lands. On authority of Governor Scofield suit has been brought by the Honorable Attorney General (Mr. Mylrea) for the recovery of the value of the timber cut. This suit is now pending in the circuit court for Marathon county.

TRESPASS ON SWAMP LANDS IN THE MEMOMONEE
INDIAN RESERVATION.

By an act of Congress approved June 12, 1890, entitled, "An Act to authorize the sale of timber on certain lands reserved for the use of the Menomonee tribe of Indians in the State of Wisconsin," the Secretary of the Interior was authorized to issue contracts for the cutting of pine timber to the Indians on the Menomonee Reservation.

The State of Wisconsin is the owner of the fee to about 22,000 acres of swamp land in this Reservation, of which amount

15,737 acres was patented to the state on November 13, 1865, Patent No. 8.

It does not appear that any attention was given to the protection of these lands by former Commissioners of Public Lands. While investigating the status of the claims of the state for swamp lands at Washington, it was discovered that the Indians, acting under authority given by the Department of the Interior, had cut, during the four years following 1890, about four million feet of pine timber, and that the department had disposed of this timber at public sale for the benefit of the Indians.

The investigation disclosed also that there had been cut by the Indians, under the same authority, during the logging season of 1897-98, from swamp lands which had been patented to the state, over one million feet of pine timber. This timber, with the timber cut from lands belonging to the Indians, was sold to Perley, Lowe & Company, of Chicago, Illinois, the highest bidder for same at the sale of said timber. Perley, Lowe & Company re-sold all of the timber to Seymour W. Hollister, of Oshkosh, Wisconsin.

The whole matter was laid before the Honorable Assistant Attorney General (Mr. Erdall), who determined that under the circumstances the state owned the timber and could replevin the same. The matter was then laid before Governor Scofield by the Honorable Commissioners and authority was granted for the bringing of a suit of replevin in the circuit court of Oconto county for the recovery of this timber. The proper papers were prepared and served on the parties in interest. Mr. Hollister immediately gave bond, as provided by statute, in the sum of twenty-five thousand dollars to pay any amount found to be due the state for the timber cut from its lands. This bond was accepted by the Honorable Attorney General (Mr. Mylrea), and on May 15th, 1898, the sheriff of Oconto county was instructed to surrender said logs and timber to said Mr. Hollister.

The action taken by the state was communicated to the Honorable Commissioner of Indian Affairs and a plan suggested for determining the amount of timber cut from the lands owned by the state and a basis of settlement.

It appearing that nothing could be accomplished by corre-

spondence, on June 10, 1898, Governor Scofield went to Washington and presented the matter to the Honorable Secretary of the Interior and the Honorable Commissioner of Indian Affairs. They arrived at an agreement to the effect that representatives of the General Land Office, Indian Bureau, State of Wisconsin, Perley, Lowe & Company and Seymour W. Hollister should go upon the lands of the state in the Menomonee Indian Reservation, with skilled woodsmen and estimators, and determine by survey and estimate the amount of timber cut during the logging season of 1897-98 from swamp lands, which had been patented in the state.

On July 6, 1898, the representatives made their report as follows:

"In the matter of the claim of the state of Wisconsin against the United States and Seymour W. Hollister for damages by reason of the cutting and removal of Pine timber from lands owned by the state of Wisconsin, as show in Swamp Land Patent No. 8, dated Nov. 13, 1865.

"We, the undersigned, representing the parties in interest, certify that a careful examination has been made of the lands hereinafter described and we find that there has been cut and removed from said described lands during the logging season of 1897-8, one million forty-four thousand five hundred feet, board measure, of pine timber and logs; that said timber and logs were landed on the south branch of the Oconto river in township 30 N. of range 16 east; that the records in the office of the Indian Agent for the Menominee Indians show that said timber and logs, were on March 15, 1898, sold to Perley, Lowe & Company of Chicago, Ill., at a price and for a consideration of thirteen dollars sixty cents (\$13.60) per thousand feet board measure; that said logs and timber were thereafter sold and transferred by Perley, Lowe & Company to Seymour W. Hollister of Oshkosh, Wisconsin, and said sale and transfer was thereafter confirmed by the Honorable Secretary of the Interior.

"The following is the description of the lands from which said timber and logs were cut, and the amount of the same, viz.:

N. W. of N. E. Sec. 1,	Tp. 30	N.,	R. 16	E. }	883 Trees; 698,000 ft. B. M.
S. W. of N. E. Sec. 1,	"	"	"	"	
S. E. of N. E. Sec. 1,	"	"	"	"	
N. E. of N. W. Sec. 9,	"	"	"	"	119 Trees; 170,000 ft. B. M.
N. W. of N. W. Sec. 9,	"	"	"	"	
S. W. of N. W. Sec. 9,	"	"	"	"	
S. E. of N. W. Sec. 9,	"	"	"	"	

N. E. of S. E. Sec.29,	Tp. 30	N.,	R. 16	E. }	9 Trees;
S. E. of N. E. Sec.29,	" "	" "	" "	" }	6,500 ft. B. M.
N. E. of S. W. Sec.32,	" "	" "	" "	" }	176 Trees;
N. W. of S. W. Sec.32,	" "	" "	" "	" }	170,000 ft. B. M.
S. E. of S. W. Sec.32,	" "	" "	" "	" }	
Total.....					1,187 Trees; 1,044,500 ft. B. M.

"The amount of timber and logs as stated above is all of the timber and logs claimed by the state of Wisconsin as having been cut and removed during the logging season of 1897-8, (See authority No. 53369 of Aug. 13, 1897), from lands owned by said state as shown by Patent No. 8, dated March 15, 1865, and sold by the United States to Perley, Lowe & Company, and by them sold and transferred to Seymour W. Hollister.

For the state of Wisconsin:

E. G. Mullen, Chief Inspector of Lands.

E. S. Shepard, Examiner and Scaler.

H. H. Schwartz, Special Agent for United States Interior Department.

James Houston, Examiner and Scaler for the United States.

D. H. George, U. S. Indian Agent, Green Bay Agency, Wisconsin.

P. E. Doyle, Logging Superintendent.

S. W. Hollister, for himself and Perley, Lowe & Company.

Signed in Duplicate."

On July 7, 1898, the above report was transmitted to the Honorable Commissioner of Indian Affairs with the following recommendation:

UNITED STATES INDIAN SERVICE,

Green Bay Agency,

Keshena, Wisconsin, July 7, 1898.

Hon. Com. of Indian Affairs, Washington, D. C.

SIR—I have the honor to state that in accordance with instructions contained in your letter dated June 25th ult., Harry H. Schwartz, Special Agent of the General Land Office; James Houston, scaler; P. E. Doyle, Logging Superintendent at this Agency, and myself on the part of the Department; E. G. Mullen, Chief Inspector of Lands for the state of Wisconsin, and S. W. Hollister on the part of Perley, Lowe & Company and him-

self, mailed you a report in duplicate of the amount of timber cut on lands claimed by the state of Wisconsin located within the boundaries of the Menominee Indian Reservation, during the winter of 1897-98. The report covers the timber cut from all lands claimed by the authorities of the state of Wisconsin under Patent No. 8, dated November 13th, 1865, located near the south branch of the Oconto river. The report covers more land than was described in the letter of instructions, but I wanted to make a clean job of it and had all the lands claimed by the state examined. The report shows that 1,187 trees were cut, scaling 1,044,500 feet.

This timber was cut, with other timber, on the Menominee Indian Reservation, under authority 53369, dated August 13th, 1897, under the provisions of the Act of June 12th, 1890, (26 Stats., 146), providing for the cutting of the pine timber on the Menominee Indian Reservation.

The logs cut on lands claimed by the state of Wisconsin and other logs cut by the Menominee Indians were sold on March 15, 1898, to Perley, Lowe & Co. of Chicago, Ill., for \$13.60 per thousand feet. The sale was approved by the Department under date of March 25th, 1898, authority 55997. The logs were re-sold by Perley, Lowe & Co. to S. W. Hollister of Oshkosh, Wisconsin. On or about April 30, 1898, the authorities of the State of Wisconsin attached or seized the whole amount of logs cut and banked by the Menominee Indians on the south branch of the Oconto river, and now claim \$13.60 per thousand feet for the logs cut from the lands claimed by the state of Wisconsin.

I would state that the trespass (if a trespass) was not malicious or wilful, and in my opinion the demand of the State of Wisconsin for payment for the logs cut on lands claimed by it is exorbitant and excessive and should not be allowed.

It is my opinion that the cost of cutting and banking the logs should certainly be deducted from the price the logs sold for.

It cost to cut and bank the logs claimed by the state as follows:

Logs cut on Section 1, Tp. 30 N., R. 16 E., 883 trees, 698,000 feet. These logs were cut and banked by Eliza Fredenburg, contract No. 19, and she was paid \$4.50 per thousand feet for cutting and banking the same.

The logs on Sec. 9, Tp. 30 N., R. 16 E., 119 trees, 170,000 feet, were cut and banked by Barney Stone, contract No. 7, and he was paid \$4.25 per thousand feet for cutting and banking the same. The logs on Sec. 29, Tp. 30 N., R. 16 E., 9 trees, 6,500 feet, were cut and banked by William Kinney, contract No. 51, and he was paid \$4.40 per thousand feet for cutting and banking the same. The logs on Sec. 32, Tp. 30 N., R. 16 E., 176 trees,

170,000 feet, were cut and banked by Rachel Warrington, contract No. 28, and she was paid \$4.50 per thousand feet for cutting and banking the same.

I would say that it has always been the custom in this vicinity that where a trespass of cutting timber has been committed that was not malicious or wilful, to settle with the owner of the timber for what the standing trees or stumpage was worth, and as the standing trees or stumpage on this land claimed by the state was worth, in my opinion, about \$8 per thousand feet, I think that the state of Wisconsin ought to settle on that basis, if they have a just claim.

Copies of the logging contracts are on file in the Indian Office.

(Signed)

Very respectfully,

D. H. GEORGE,
U. S. Indian Agent.

UNITED STATES INDIAN SERVICE.

Green Bay Agency,

Keshena, Wis., July 7, 1898.

Hon. Commissioner of Indian Affairs, Washington, D. C.

SIR—I have the honor to state that I have read the letter of D. H. George, U. S. Indian Agent, Green Bay Agency, Wisconsin, relative to the claims of the authorities of the state of Wisconsin for pine timber cut on the lands claimed by the state on the Menomonee Indian Reservation, and I agree with him in his conclusions.

(Signed)

Very respectfully,

P. E. DOYLE,
Logging Superintendent.

The foregoing reports were transmitted by the Honorable Commissioner of Indian Affairs to the Honorable Secretary of the Interior, with the recommendation that the state be allowed eight dollars per thousand feet for the amount of timber ascertained to have been cut and removed from the lands of the state.

By letter, dated July 27, 1898, the state was advised that the Honorable Secretary had approved the recommendation of the Honorable Commissioner, and request was made that a claim on on that basis, viz. : for 1,044,500 ft., at \$8.00, \$8,356.00, be presented.

Governor Scofield refused to approve a settlement based on their finding as to the value of the stumpage. or to

file a claim with the United States. Many letters and telegrams were exchanged. The Honorable Commissioner refused to re-submit the matter to the Honorable Secretary on the basis claimed as fair by the state, and the state authorities refused to recede from the position originally taken. It became apparent that, although the state and the United States authorities were anxious to effect a settlement, they were unable to do so by correspondence. Finally it was decided that Governor Scofield should visit Washington and endeavor to get the differences adjusted. At a meeting with the Honorable Commissioner they agreed that the state was properly entitled to the amount claimed, and to re-submit the matter to the Honorable Secretary. This was done and authority was granted for a settlement with Perley, Lowe & Company and Seymour W. Hollister on the basis and for the amount claimed by the state, to-wit.: 1,044,500 ft., \$9,548.10. This gave to the state \$1,192.10 more than the United States were at first willing to concede as the amount due.

On November 12, 1898, Governor Scofield met Mr. Hollister and Mr. Lowe at the office of Perley, Lowe & Company, Chicago, and there all the proper papers were executed and Mr. Hollister on behalf of himself and Perley, Lowe & Company, paid to the Governor a certified check for \$9,548.10, in full for the claim of the state.

The firm stand taken by the administration in this matter resulted not only in the recovery of a large sum of money for the state, but it established the fact that the United States could not damage the lands of the state in Indian reservations and escape paying the penalty.

STATE PARK LANDS.

By chapter 324, laws of 1878, entitled, "An Act to provide for a state park in the State of Wisconsin," it was provided that all lands owned by the state of Wisconsin within the limits of certain townships named were set apart from the public domain as a state park.

Twenty-four townships were covered by this act, the aggregate area of which is:

Land	412,475 acres
Water	74,672 acres
	<hr/>
Total	487,147 acres

The area of land owned by the state of Wisconsin within the State Park limits on January 1st, 1897, was 59,030 acres, or about one-seventh of the entire area. The sale price of these lands, computed at the rate per acre established by law, was \$81,737.00.

It will appear from the foregoing that what is known as the "State Park" was in reality many small tracts of land scattered through twenty-four townships. Part of them were classed as pine lands, and the timber thereon was in constant danger of destruction by fire, owing to the choppings left by lumbermen on adjoining lands. This danger was increasing each year as logging operations were extended. The timber on the state lands had reached its maximum value, by reason of the fact that logging railways had been extended through the territory, dams had been built, streams cleaned out for driving logs, and logging roads cut. It was deemed unwise to keep these lands out of the market until the improvements had fallen into disuse, as there was not enough timber on them to warrant rebuilding or repairing them, and therefore it would have had to be sold for a low price owing to the lack of facilities for getting it to the market.

The whole matter was fairly covered by Governor Scofield when he said to a reporter for the "Times-Herald":

"The question of disposing of what are known as the 'State Park' lands, is a question of business, and not one of politics or sentiment."

By chapter 367, laws of 1897, provision was made for the examination and appraisal of the State Park lands, and the offering for sale of the same to the highest bidder over such appraised value. The examination and appraisal was made during the summer of 1897, and the lands were offered for sale at Rhineland, Wisconsin, on December 15, 1897. The appraised value of the State Park lands was \$346,000.00.

There has been disposed of, (at the public sale, and in the State Land office since the date of the sale), 12,853 acres for \$133,-

876.00, an average of over \$10.40 an acre. There remains unsold 46,177 acres, the appraised value of which is \$212,124.00.

It is apparent from the above statement that the legislature of 1897 acted wisely, and for the best interests of the state, when they enacted the law for restoring the State Park lands to the Public Domain, and provided a safe and profitable method for their disposal.

SWAMP LAND INDEMNITY.

By an act of congress approved September 28, 1850, (known as the swamp-land act), there was granted to the state of Wisconsin "the whole of those swamp and overflowed lands made unfit thereby for cultivation, which shall remain unsold at the passage of this act."

By the terms of this act it was made the duty of the Secretary of the Interior to administer the same.

On November 21, 1850, instructions were sent to the Surveyor General providing two methods of selecting swamp lands under this act, to-wit.: by the plats and field notes of government survey, or by surveys and examination in the field, to determine whether or not each smallest legal sub-division was more than one-half swamp or overflowed.

On June 3, 1851, Governor Dewey, on behalf of the state, elected to make swamp selections by the plats and field notes of government survey, and the grant to Wisconsin has been administered on that basis.

It appears as the years went on that inaccuracies were discovered in the surveys and field notes, and in 1859 an effort was made to have new surveys made for the purpose of establishing what lands were swamp and thereby passed to the state. This in fact, was an effort to have the method of selecting swamp lands changed. Although a strong case was made, the Secretary of the Interior refused to permit the change, saying:

"Our predecessors in office, both on the part of the state and the United States, concluded the adjustment adopted was most just and fair, and dictated by the best interests of Wisconsin. I think we have a pretty strong case against a change."

Authority for a survey was granted by the legislature at the expense of the state. This survey was completed for nine counties in 1860, a list of swamp lands prepared therefrom and filed in the General Land Office by the governor, with a request that it be administered on. The Commissioner of the General Land Office, on receipt of these lists, and referring to the Governor's request, said:

"In view, therefore, of the decision of the Secretary, the lists presented by you cannot be regarded as selections made in accordance with the arrangements entered into in 1851, and which has been the basis of all our official action so far as your state is concerned."

The office of Surveyor General for Wisconsin was abolished in June, 1866, and all of the plats and field notes were deposited with the chief clerk of the state land office in Madison.

No swamp selections had been made after 1859, but the government was disposing of the public lands without regard to their character, or the rights of the state. The governor took the matter up with the General Land Office and succeeded in getting authority to make swamp selections in certain townships. The lists of these selections were filed in the general land office, were passed on in due course of business, and many acres were patented to the state. In 1869 and 1870 other lists were filed, which were generally rejected on the ground that the Surveyor General had made selections in the same townships. Each succeeding governor made claims for swamp lands and an effort to get the whole matter adjusted, but were generally unsuccessful.

In 1879 the commissioners of the public lands caused an examination of the plats and field notes on file in the state land office to be made, with a view of obtaining some basis on which to make a final claim for losses of swamp lands. It was ascertained that more than 800,000 acres to which the state was entitled under the grant, had not been listed or patented. This fact was communicated to the governor on March 24, 1880, with the suggestion that he proceed to Washington and lay the matter before the Secretary of the Interior. This he did, and on his presentation of the matter to the Secretary of the Interior and the Commissioner of the General Land Office they decided that

the state had a just claim. They refused, however, to entertain his proposition for a change in the method of selection, and it was finally agreed to abide by the rules in force, to-wit.: the selection of swamp lands by the plats and field notes of government survey, and a commission was appointed, consisting of a clerk from the general land office (Mr. Darragh) and a clerk from the state land office (Mr. Foresman) to make a report on the claim of the state. They were instructed to examine the plats and field notes of government survey, of all lands in the state of Wisconsin, and record, in books prepared for the purpose, a list of all lands which appeared therefrom to be swamp or overflowed.

"The Commission" began its work in May, 1880, and completed it on August 13, 1881. They recorded their lists of swamp selections in volumes 6 and 7, Division K, General Land Office, and attached thereto the following certificate:

"Washington, D. C., August 13, 1881.

"In pursuance of an agreement entered into between the Governor of Wisconsin, on the part of the state, and the Commissioner of the General Land Office, and the Secretary of the Interior, on the part of the government, we, the undersigned, hereby certify that we have examined the plats and field notes of the government survey in the state of Wisconsin, and find that the greater portion of each smallest legal subdivision of the tracts herein described is swamp or overflowed land within the meaning of the Act of 28th September, 1850, and as such inures to the said State.

C. M. FORESMAN,
State Agent.

H. C. DARRAGH,
Clerk, General Land Office.

From the record of these lists it is ascertained that

“The Commission” selected, including Swamp-lands in
Indian Reservation.....1,307,560 acres

Of this amount the State has received:

Patents for Swamp-land in place.....	180,000 acres.
Patents for Swamp-land indemnity	72,000 acres.
Cash indemnity, based on a price of \$1.00 per acre.....	142,000 acres.

There was included in their selections,
lands sold prior to the grant, by the
United States..... 491,099 acres.

There was included in their selections
lands granted to the State for internal
improvements which had been accepted
and generally patented to the state for
such improvements 110,971 acres.

996,070 acres.

(The state, having taken these lands by
one grant and disposed of them, is not
fairly entitled to indemnity for their loss
under another grant.

There is claimed by the state, lands in place or indemnity
therefore (including Swamp lands in Indian Reservation,) 311,490 acres.

The status of the claim was laid before Governor Scofield in
1897, and it was decided to put the whole matter into the hands
of Senator Spooner, with a view of obtaining the needed legisla-
tion. He prepared the following bill, which was introduced by
him in the Senate, and by Hon. S. S. Barney in the House of
Representatives:

“A BILL

“To indemnify the State of Wisconsin for swamp and over-
flowed lands therein, granted by Congress to said State, but dis-
posed of by the Government, for cash or otherwise, and to quiet
the title of the settlers and other purchasers of lands within said
State from the United States, and for other purposes.

“Be it enacted by the Senate and House of Representatives of
the United States of America in Congress assembled,

“That it shall be the duty of the Secretary of the Interior, and
he is hereby directed, to adjust at the earliest practicable date

the claim of the State of Wisconsin against the United States for any and all tracts of land included in any grant of swamp and overflowed lands to said State which have been sold or otherwise disposed of by the United States; and in making said adjustment the said Secretary shall accept as the basis thereof the list of lands made by an official of the United States and one representing the said State, acting jointly, pursuant to agreement entered into between the Secretary of the Interior, the Commissioner of the General Land Office, and the State of Wisconsin, through its Governor, on or about the first day of April, anno Domini eighteen hundred and eighty, the said list having been completed August thirteenth, anno Domini eighteen hundred and eighty-one, and duly recorded and certified to in volumes six and seven of swamp-land selections of the State of Wisconsin, now on file in Division K of the General Land Office and for all lands embraced in said list which have been otherwise disposed of by the United States for which indemnity has not been heretofore granted and received, said state shall be entitled to select from any public lands of the United States situated in Wisconsin to which the United States has full title an equal number of acres, said selections to be approved by the Secretary of the Interior.

“Sec.2. That patents shall issue to said State, conveying the title to the lands so selected and approved: *Provided, however,* that no such patent shall issue until the State of Wisconsin shall have duly relinquished, by legislative act or instrument of quit-claim, all its right, title and interest to the swamp lands so disposed of by the United States and in lieu of which the said selections are made, and also all its right, title, claim, and interest in and to all swamp lands now embraced within the limits of any existing Indian reservation in said State, and also all its right, title, claim and interest in and to any swamp lands which shall have been allotted in severalty to Indians in said State, if any such lands have been so allotted.”

The bill was properly referred in both houses of Congress, and the Senate Committee on Public Lands transmitted it to the Honorable Secretary of the Interior for report and recommendation.

On December 20th inst., the reports and recommendations of the Honorable Commissioner of the General Land Office and the Honorable Commissioner of Indian Affairs on the bill having reached the Honorable Secretary, a meeting was held at his office,

at which the United States was represented by Commissioner Herman and Judge Vandeventer, Assistant Attorney General, and the State of Wisconsin, by Senator Spooner and the undersigned.

At this meeting the Honorable Secretary decided that the state was entitled to indemnity for swamp lands disposed of by the United States for cash or warrants, and all swamp lands included in any Indian Reservation, as shown by "The Commission's" list heretofore referred to, and that as to lands, which by this list were shown to be "swamp," that had heretofore passed to the state and been accepted under other grants, and lands which had been sold by the United States prior to the date of the Swamp-land Act, the state was not entitled to indemnity.

This decision was accepted as fair, and Judge Vandeventer was authorized to prepare a substitute bill, that will carry out the decision, and prepare a letter for the Honorable Secretary's signature in which he will recommend the passage of the said substitute.

The people of the state are to be congratulated that, owing to the untiring efforts of this administration and Senator Spooner, the swamp-land grant made to the State nearly half a century ago is in a fair way to be closed up, and indemnity given for swamp lands wrongfully disposed of by the United States.

There is hard work yet to be done, but the strength of Wisconsin's delegation in Congress gives assurance that there can be but one result, and that, the passage of the Indemnity Bill.

Respectfully,

E. G. MULLEN,
Chief Inspector of Lands.

APPENDIX.

Since the foregoing report was placed in the hands of the printer, the following report of the United States Senate committee, together with the text of the substitute bill, recommended by the Honorable Secretary of the Interior, has been received. The substitute bill passed the Senate, Jan. 13, 1899.

E. G. MULLEN,
Chief Inspector of Lands.

Calendar No., 1508.

55TH CONGRESS, }
3d Session. }

SENATE.

{ REPORT
{ No. 1465.

SWAMP AND OVERFLOWED LANDS IN WISCONSIN.

January 11, 1899.—Ordered to be printed.

Mr. HANSBROUGH, from the Committee on Public Lands, submitted the following

REPORT.

[To accompany S. 5171.]

The Committee on Public Lands, having considered the bill (S. 3094) to indemnify the State of Wisconsin for swamp and overflowed lands therein, granted by Congress to said State but disposed of by the Government for cash and otherwise, and to quiet the title of settlers and other purchasers of lands within said State from the United States, and for other purposes, beg leave to report a substitute bill in lieu thereof and to recommend that the substitute bill do pass.

The recommendation of the Secretary of the Interior with regard to the bill is respectfully submitted.

Department of the Interior,
Washington, January 5, 1899.

Sir: In obedience to your reference I have considered the bill (S. 3094) providing for an adjustment of the swamp-land grant to the State of Wisconsin, which bill reads as follows:

A BILL to indemnify the State of Wisconsin for swamp and overflowed lands therein, granted by Congress to said State but disposed of by the Government for cash and otherwise, and to quiet the title of settlers and other purchasers of lands within said State from the United States, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That it shall be the duty of the Secretary of the Interior, and he is hereby directed, to adjust at the earliest practicable date the claim of the State of Wisconsin against the United States for any and all tracts of land included in any grant of swamp and overflowed lands to said State which have

been sold or otherwise disposed of by the United States; and in making said adjustment the said Secretary shall accept as the basis thereof the list of lands made by an official of the United States and one representing said State, acting jointly, pursuant to agreement entered into between the Secretary of the Interior, the Commissioner of the General Land Office, and the State of Wisconsin, through its governor, on or about the first day of April, anno Domini eighteen hundred and eighty, the said list having been completed August thirteenth, anno Domini eighteen hundred and eighty-one, and duly recorded and certified to in volumes six and seven of swamp-land selections of the State of Wisconsin, now on file in Division K of the General Land Office; and for all lands embraced in said list which have been otherwise disposed of by the United States for which indemnity has not been heretofore granted and received, said State shall be entitled to select from any public lands of the United States situated in Wisconsin to which the United States has full title an equal number of acres, said selections to be approved by the Secretary of the Interior.

Sec. 2. That patents shall issue to said State conveying the title to the lands so selected and approved: Provided, however, That no such patent shall issue until the State of Wisconsin shall have duly relinquished, by legislative act or instrument of quitclaim, all its right, title, and interest to the swamp lands so disposed of by the United States, and in lieu of which the said selections are made, and also all its right, title, claim, and interest in and to all swamp lands now embraced within the limits of any existing Indian reservation in said State, and also all its right, title, claim, and interest in and to any swamp lands which shall have been allotted in severalty to Indians in said State, if any such lands shall have been so allotted.

The act of September 28, 1850 (9 Stat. L., 519), made a grant in present to the State of Wisconsin of the whole of the swamp and overflowed lands therein, made unfit thereby for cultivation, which remained unsold at the passage of this act. The duty of determining what were swamp lands within the meaning of this grant was placed upon the Secretary of the Interior, and he was directed to class as swamp lands all legal subdivisions the greater part of which was wet and unfit for cultivation, and to class as non-swamp lands all legal subdivisions the greater part of which was not wet and unfit for cultivation. The evidence upon which the Secretary of the Interior was to base his determination, and the means of obtaining such evidence, were not prescribed, but were left to his judgment and discretion.

November 21, 1850 (1 Lester, 543), the Commissioner of the General Land Office, with the subsequent approval of the Secretary of the Interior, addressed a letter to the several surveyors-general respecting the method of identifying and listing the swamp lands inuring to the several States under the grant, wherein it was said:

"This act clearly and unequivocally grants to the several States those lands which, from being swampy or subject to overflow, are unfit for cultivation. In this class is included also all lands which, though dry part of the year, are subject to inundation at the planting, growing, or harvesting season, so as to destroy the crops, and therefore, are unfit for cultivation, taking the average of the seasons for a reasonable number of years, as the rule of determination.

"You will please make out a list of all the lands thus granted to the State, designating those which have been sold or otherwise disposed of since the passage of the law, and the price paid for them when purchased.

"The only reliable data in your possession from which these lists can be made out are the notes of the surveys on file in your office, and if the authorities of the State are willing to adopt these as a basis of those lists, you will so regard them. If not, and those authorities

furnish you satisfactory evidence that any lands are of the character embraced by the grant, you will so report them."

It is thus seen that the several States were given the opportunity of electing to have their swamp lands identified and listed from the field notes of the public surveys or from an inspection of the lands in the field.

June 3, 1851, the State of Wisconsin elected to have its swamp lands identified and listed from the field notes of the public surveys, as shown by a letter of that date written by the governor to the surveyor-general of Wisconsin and Iowa, wherein it is said, *inter alia*:

"I have to advise you that this State is willing to adopt the field notes of the surveys on file in your office as the basis of making out the lists of lands granted by the act of Congress named.

"This determination is the result of mature deliberation, and dictated by true economy on the part of this State."

May 2, 1859, in a letter to the Commissioner of the General Land Office complaining of the operation of the method theretofore adopted for identifying the swamp lands in said State, the governor of the State said:

"I submit that the State ought not to be concluded or prejudiced by any erroneous or unfortunate mode of selecting these lands which may have been adopted."

August 1, 1859, in considering this letter of the governor, the Secretary of the Interior wrote the Commissioner of the General Land Office as follows:

"Since the grant was made, and up to the present time, the field notes of the public surveys have been the basis of the selections. * * * The governor of Wisconsin in June, 1851, * * * advised the Land Office that Wisconsin would be willing to adopt the field notes of the United States surveys as the basis of setting apart the granted lands.

"The present governor, however, * * * suggests a reexamination and resurvey, with a view of ascertaining what lands have been erroneously omitted from the lists of swamp lands, that they may be hereafter certified to the State. The most serious objection to this course is that it would unsettle everything that has been done. The reexamination would necessarily extend to the lands heretofore certified and patented, and the State would have to restore to the United States such tracts as may have been improperly listed as inuring to her, for it could not be asked that all errors and inaccuracies should be corrected in favor of the State, but none corrected against her. The inevitable results would be delay in administering the grant, dissatisfaction and litigation among the citizens of the State, and appeals to the legislature for relief or damages.

"A second consideration is this: Our predecessors in office, both on the part of the State and the United States, in view of all the facts existing at the time, concluded that the method of adjustment adopted was the most just and fair, and dictated by the best interests of Wisconsin. * * * I think we have a very strong case against a change. * * * We could not hope to make a change for the better * * *."

June 29, 1870, the Commissioner of the General Land Office wrote a letter to the governor of the State of Wisconsin, wherein it was said, *inter alia*:

"Wisconsin at an early day elected to make the selection of lands inuring to her under the swamp grant from the field notes of public surveys to be designated and listed by the United States surveyor-general. An effort was subsequently made on the part of the State authorities to change the basis of selection from the field notes to an examination by agents in the field; but the proposition was declined by the Secretary in his letter of October 4, 1855, and the original plan was adhered to."

February 11, 1874, the governor of the State, in writing to the Com-

missioner of the General Land Office respecting a claim of the State to lands alleged to be actually swamp in character, but not so shown by the field notes, said:

"Will you please advise me whether such claim of the State has ever been recognized by the General Government, or whether the Government still holds the State to the selection of such lands only as appear to be swamp lands on the plats of the General Land Office?"

The Commissioner of the General Land Office replied February 21, 1874, saying:

"The field notes have always been held conclusive, both for and against the State, and on the 4th of October, 1855, the then Secretary of the Interior sustained the decision of this office, refusing to take testimony to disprove the swampy character of land in Wisconsin shown to be swamp by the field notes."

It is thus seen that, after electing to be bound by the statements in the field notes respecting the character of the lands in that State, the State of Wisconsin repeatedly sought to have this method of identifying and listing the lands inuring to it under the swamp-land grant changed so that the character of the lands might be determined from an inspection in the field, but the authorities of the Land Department of the United States held the State to its original election to abide by the field notes, and would not consent to a change.

Undoubtedly there were mistakes and errors in the surveys whereby swamp lands were sometimes shown by the field notes to be dry lands, and dry lands were sometimes shown to be swamp lands. The State claimed that these mistakes preponderated very largely against it, and that it suffered a great loss by the adherence to the field notes as a test of the character of the land, but it is now practically impossible to tell which way these errors or mistakes preponderated. In addition to this controversy there was great delay in the examination of the field notes and in the listing to the State of lands shown by field notes to be swamp lands, and out of all of this many differences arose between the State and the Land Department of the United States.

In the spring of 1880 the governor of Wisconsin visited Washington for the purpose of securing an adjustment of these differences; and at a conference between the governor of the State, the Secretary of the Interior, and the Commissioner of the General Land Office it was agreed that the method of referring to the field notes of the public surveys for the purpose of determining what were and what were not swamp lands should be continued, and that the field notes of surveys in that State should be examined by an agent of the Land Department of the United States and by an agent of the State, and that their joint report as to what lands were described as swamp and overflowed by such field notes should be the basis of adjusting the swamp-land grant to that State. The Land Department of the United States accordingly selected one agent and the State selected another, who, after spending over a year in examining these field notes, made a report and list of the lands therein described as swamp and overflowed. This report is embraced in what is known as volumes 6 and 7 of the Wisconsin Swamp Selections in the General Land Office, labeled "Report of Swamp-Land Commission—Wisconsin," and has appended thereto the following certificate, executed by the agents who made the examination:

Washington, D. C., August 13, 1881.

In pursuance of an arrangement entered into between the governor of Wisconsin, on the part of the State, and the Commissioner of the General Land Office and the Secretary of the Interior, on the part of the Government, we, the undersigned, hereby certify that we have examined the plats and field notes of Government survey in the State of Wisconsin and find that the greater portion of each smallest legal subdivision of the tracts herein described is swamp or overflowed land

within the meaning of the act of 28th September, 1850, and, as such, inures to the State.

C. M. FORESMAN,
State Agent.
H. C. DARRAGH,
Clerk, General Land Office.

Referring to this matter, the Commissioner of the General Land Office says, in his annual report for the fiscal year ending June 30, 1881, page 204:

"The basis for selecting the swamp lands in the State of Wisconsin is the plats and field notes of Government survey. Upon examination of the lists of lands furnished this office claimed by the State as swamp or overflowed, many of the tracts did not seem, by the evidence in this office, to be of the character contemplated by the grant.

"With a view to arriving at some understanding between the State and the Government, the governor of Wisconsin came here in the spring of 1880, and upon consultation with the Commissioner and Secretary of the Interior it was decided to continue the method then in force in this office, and the work of making selections was immediately commenced by an agent appointed by the governor on the part of the State, and a clerk from this office, detailed for that purpose, on the part of the Government.

"The work of making the selections has been completed, and will account for the large number of tracts that have been examined, with the plats and field notes of public survey, during the past year."

This report and list of swamp lands embraces about 843,000 acres, of which all but 336,300 were embraced in lists theretofore made and then awaiting action. This report and list has since been recognized to the extent of patenting to the State as swamp lands in place 180,000 acres (estimated), allowing swamp-land indemnity for 72,000 acres (estimated), and allowing swamp-land cash indemnity to the amount of about \$142,000, and there remain in the report and list about 494,640 acres which have not been patented to the State under the swamp-land grant and for which no indemnity has been allowed.

After the making of said report and list, the Land Department, without the consent, and, indeed, against the objection of the State, receded from its former position and ruled that neither the State nor the United States was bound by the field notes of surveys, or by the report and list made by the two agents of the State and Land Department; and notwithstanding the said examination of the field notes, of surveys, and notwithstanding the said report and list of lands described as swamp and overflowed by such field notes, a large amount of the lands embraced in said report and list were sold and otherwise disposed of by the United States under the public-land laws in opposition to the claim of the State. In the meantime, however, lands which were by the field notes erroneously shown to be dry, had been sold and disposed of by the United States, and lands which were by the field notes erroneously shown to be swamp and overflowed, had been patented to the State, and had been by it sold and disposed of, so that neither the United States nor the State was in a position to give full operation to any new or substituted method of identifying the swamp and overflowed lands. An examination of the lands in the field had also become, to some extent, impracticable, because with the settlement of the country the swamp and overflowed districts had been materially reclaimed by the construction of ditches and drains under private and public supervision.

Under the circumstances, I respectfully submit:

First. That the field notes of public surveys should be continued as the basis for adjusting the swamp-land grant to the State of Wisconsin.

sin, and that after holding the State to its original choice of that plan for over thirty years it should not have been changed.

Second. That under the agreement and understanding effected between the governor of the State, the Secretary of the Interior, and the Commissioner of the General Land Office, the report and list made by the two agents aforesaid should be accepted and adhered to as determining the character of the lands in said State, as shown by the field notes of surveys, so far as the surveys were then completed in said State.

Passing over some minor and probably immaterial matters, the pending bill is believed to be properly subject to the following objections:

First. The two agents of the State and Land Department were only authorized to make an examination of the field notes of public surveys for the purpose of determining what lands were by those field notes described as being swamp and overflowed; in other words, their duty was limited to determining this single question of fact. The report and list made by them includes a class of lands described as swamp and overflowed by the field notes, but which have been disposed of by the United States, and for which no indemnity ought to be allowed. The lands within this class approximate 128,000 acres, and include lands sold or disposed of prior to the date of the swamp-land grant, and lands either patented or approved to the State under grants other than the original swamp-land grant. That grant, by its own terms, had no application to lands theretofore sold, and hence no indemnity should be allowed for them. Where the State could take the same lands either under the original swamp-land grant or under some other grant, as was the case with some of these lands, and chose to take them under another grant, it is believed that indemnity should not be allowed for them. The bill as introduced would allow indemnity for all these lands, and is therefore objectionable in its present form.

Second. Existing laws provide for cash and other indemnity for swamp and overflowed lands otherwise disposed of by the United States between September 28, 1850, and March 3, 1857, which, on the basis of the said report and list, would give to the State of Wisconsin cash and other indemnity for, perhaps, not exceeding 5,000 acres, in addition to the indemnity heretofore allowed. It is believed that the bill should provide that the land indemnity thereby given shall be in lieu and in full satisfaction of all claim for cash and other indemnity under existing laws, so as to avoid a possible claim for double indemnity for the same land.

Third. To avoid possible complication and confusion by reason of others becoming parties in interest in the adjustment of this grant, the bill should expressly provide that no scrip or land warrants shall be issued on account of the land indemnity allowed by the act, and that no assignment or transfer by the State of any right to land indemnity under the act shall be recognized or given any effect whatever. In this way alone can the adjustment be confined to the State and Land Department of the United States.

Recently the swamp-land claim of the State and the provisions of this bill were the subject of a conference held in the office of the Secretary of the Interior, at which there were present, on behalf of the State, Senator Spooner, who introduced the bill, and Mr. E. G. Mullen, an agent of the State, and on behalf of the Land Department of the United States, the Secretary of the Interior, the Commissioner of the General Land Office, and the Assistant Attorney-General assigned to this Department. After careful consideration the representatives of the State assented to the objections herein made to the pending bill, and it was conceded on the part of the representatives of the Land Department that subject to these objections the State of Wisconsin

is equitably entitled to relief on the general line named in the bill. The opinion was also earnestly expressed by all participating in this conference that the swamp-land grant to said State could be best adjusted and settled, with justice to the State and to the United States, under the provisions of a substituted or amended bill reading as follows:

A BILL providing for the adjustment of the swamp-land grant to the State of Wisconsin, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That it shall be the duty of the Secretary of the Interior, and he is hereby directed, at the earliest practicable time to complete the adjustment of the grant of swamp and overflowed lands to the State of Wisconsin, and in completing such adjustment the report and list on file in the General Land Office, known as volumes six and seven of Wisconsin Swamp-land Selections, labeled "Report of Swamp-Land Commission, Wisconsin," bearing date August thirteenth, eighteen hundred and eighty-one, made by C. M. Foresman and H. C. Darragh, agents acting on behalf of said State and the Land Department of the United States, respectively, and containing a statement of lands within said State returned and described as swamp and overflowed by the field notes of public surveys, shall be accepted and considered as the basis of such adjustment, subject, however, to the conditions and provisions of this Act.

Sec. 2. That the said adjustment shall be made as follows:

First. All lands embraced in said report and list which have not been heretofore otherwise disposed of and for which no indemnity has been heretofore allowed, and which are not within the limits of an existing Indian reservation, shall be patented to the State of Wisconsin as swamp and overflowed lands.

Second. Upon relinquishment by the State, by or under appropriate legislative enactment, of all right, title, claim, and interest in and to all the lands embraced in said report and list which have been heretofore disposed of otherwise than according to the provisions of an act entitled "An act to enable the State of Arkansas and other States to reclaim the swamp lands within their limits," approved September twenty-eighth, eighteen hundred and fifty, the State of Wisconsin shall be entitled to select, according to the legal subdivisions of the public surveys, from the unappropriated public lands within that State, to which no claim lawfully arising under the public-land laws is asserted in any proceeding pending before the Land Department at the time of such selection, a like quantity of lands which shall be patented to the State in lieu of the lands so otherwise disposed of: Provided, however, That no indemnity shall be allowed to said State for lands for which cash or other indemnity has been heretofore allowed or for lands which were sold or otherwise disposed of by the United States prior to September twenty-eighth, eighteen hundred and fifty, or for lands which have been heretofore patented or approved to the State of Wisconsin under grants other than the grant of swamp lands made by the act of Congress approved September twenty-eighth, eighteen hundred and fifty, aforesaid.

Third. Lands embraced in said report and list shall be considered and held to be otherwise disposed of within the meaning of this section if at the time of the passage hereof they are included within a claim lawfully arising under the public-land laws and asserted in any proceeding then pending before the Land Department.

Fourth. For all swamp and overflowed lands embraced in an existing Indian reservation in said State, as shown either by the said report and list or by the field notes of public surveys approved after August thirteenth, eighteen hundred and eighty-one, whether the said lands have been patented to the said State or remain unpatented, and whether heretofore or hereafter surveyed, the State shall be entitled to select and receive patents for a like quantity of indemnity land under the provisions of this act, upon relinquishing to the United States, by

or under proper legislative enactment, the said swamp and overflowed lands within such Indian reservation, free from any and all right, title, claim, and interest of the State or those claiming through or under the State, and this provision shall equally authorize the relinquishment by the State of any school lands within an existing Indian reservation in said State and the selection and patenting of indemnity land therefor.

Sec. 3. No cash indemnity shall hereafter be paid under any law heretofore or hereafter enacted, on account of the sale or disposition of any of the lands embraced in said report and list, and the land indemnity provided for in this act shall be in lieu, and in full satisfaction, of all claim for cash or other indemnity under existing laws.

Sec. 4. No scrip, land warrant, or other evidence of a right to select or locate public lands shall ever be issued under this act, and no assignment or transfer by the State of any right to land indemnity under this act shall ever be recognized or given any effect whatever, but after the said indemnity lands shall have been selected and patented according to the provisions of this act, they may be sold or otherwise disposed of by the State according to its laws.

Sec. 5. The Secretary of the Interior may adopt and prescribe all needful rules and regulations for carrying into effect the provisions of this act.

Sec. 6. This act shall have no force or effect unless the State of Wisconsin not later than the next regular session of its legislature after the passage of this Act shall by legislative enactment accept the provisions hereof, and make or authorize the making of the relinquishments herein required, a certified copy of which enactment shall be filed with the Secretary of the Interior.

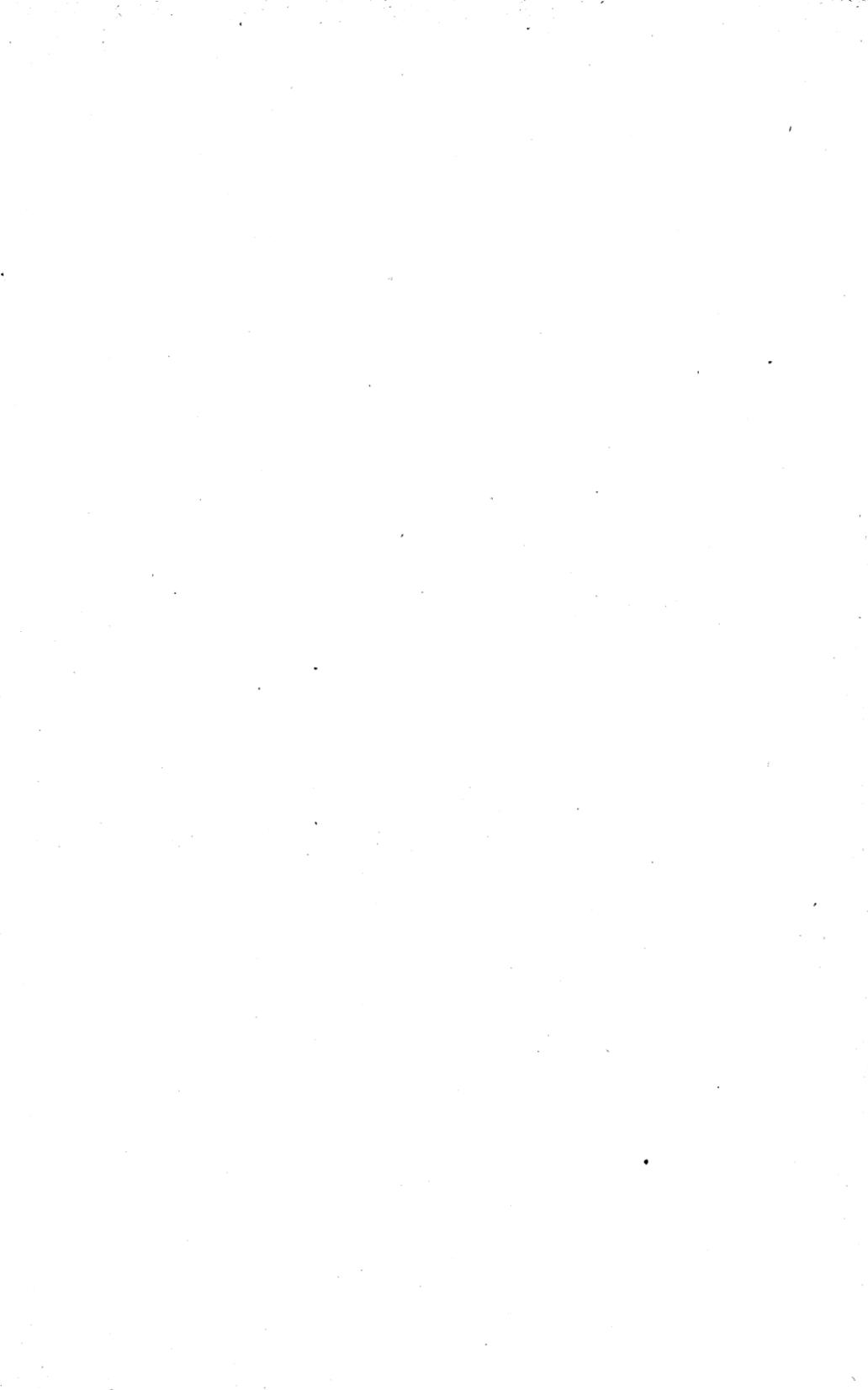
Respecting the provisions of the third subdivision of section 2 of the substituted or amended bill hereby proposed, I desire to say that in the existing Indian reservations within the State of Wisconsin very considerable annoyance and difficulty have resulted from the State's ownership of and claim to lands in such reservations. In some instances, lands within these reservations have been patented to the State and in other instances the right of the State thereto accrued before the reservations were established. The Indians, in some instances, have selected these State lands for allotments and, notwithstanding the right of the State therein, such lands have been allotted to Indians, so that to-day in Wisconsin there are lands within some of the Indian reservations which have been both patented to the State and allotted in severalty to Indians. It is the purpose of this subdivision of the bill to give the State other lands in exchange for those to which it is entitled in the Indian reservations, and thus bring all the lands within such reservations under the ownership of the United States, so that they may be allotted or otherwise disposed of according to treaty stipulations with the Indians or as may be deemed best in dealing with the Indians.

The act making a grant of swamp lands to the State of Wisconsin and other States is dated, as before shown, September 28, 1850, and directs that the lands to which the State is entitled thereunder shall be ascertained and identified by the Secretary of the Interior "as soon as practicable after the passage of this act." Almost half a century has elapsed since that enactment, and this delay has largely added to the difficulties which naturally attend the adjustment of such a grant. It is believed that the best interests of all concerned not only justify but demand that the adjustment of the grant be completed and the rights of all parties be ascertained and defined within the shortest reasonable time. The substitute or amended bill herein proposed seems to me to furnish the best means of accomplishing this much desired end, and I therefore earnestly recommend its enactment.

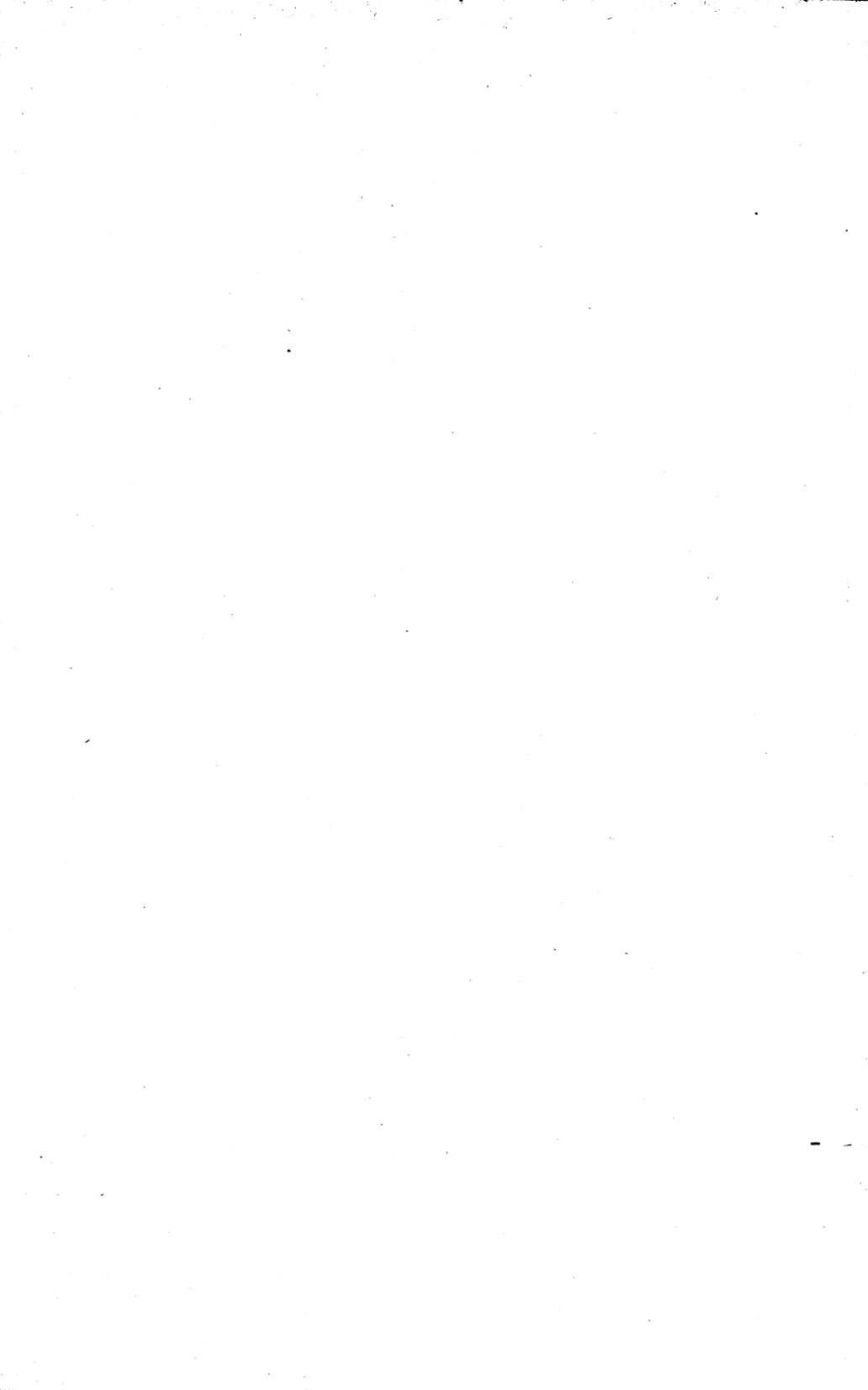
Very respectfully,

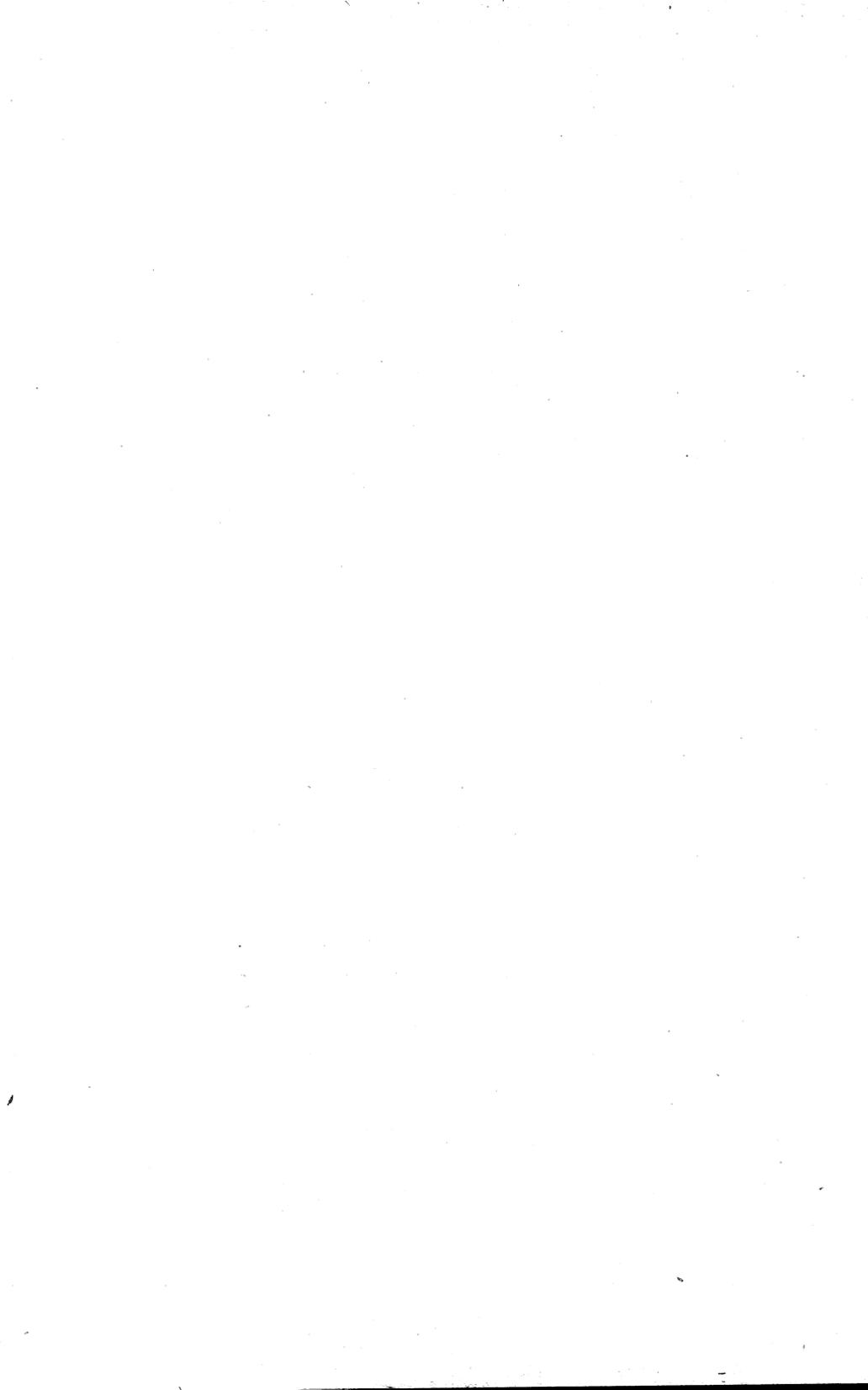
C. N. BLISS, Secretary.

Hon. HENRY C. HANSBROUGH,
Chairman Committee on Public Lands, United States Senate.









REPORT

OF THE

Forestry Commission

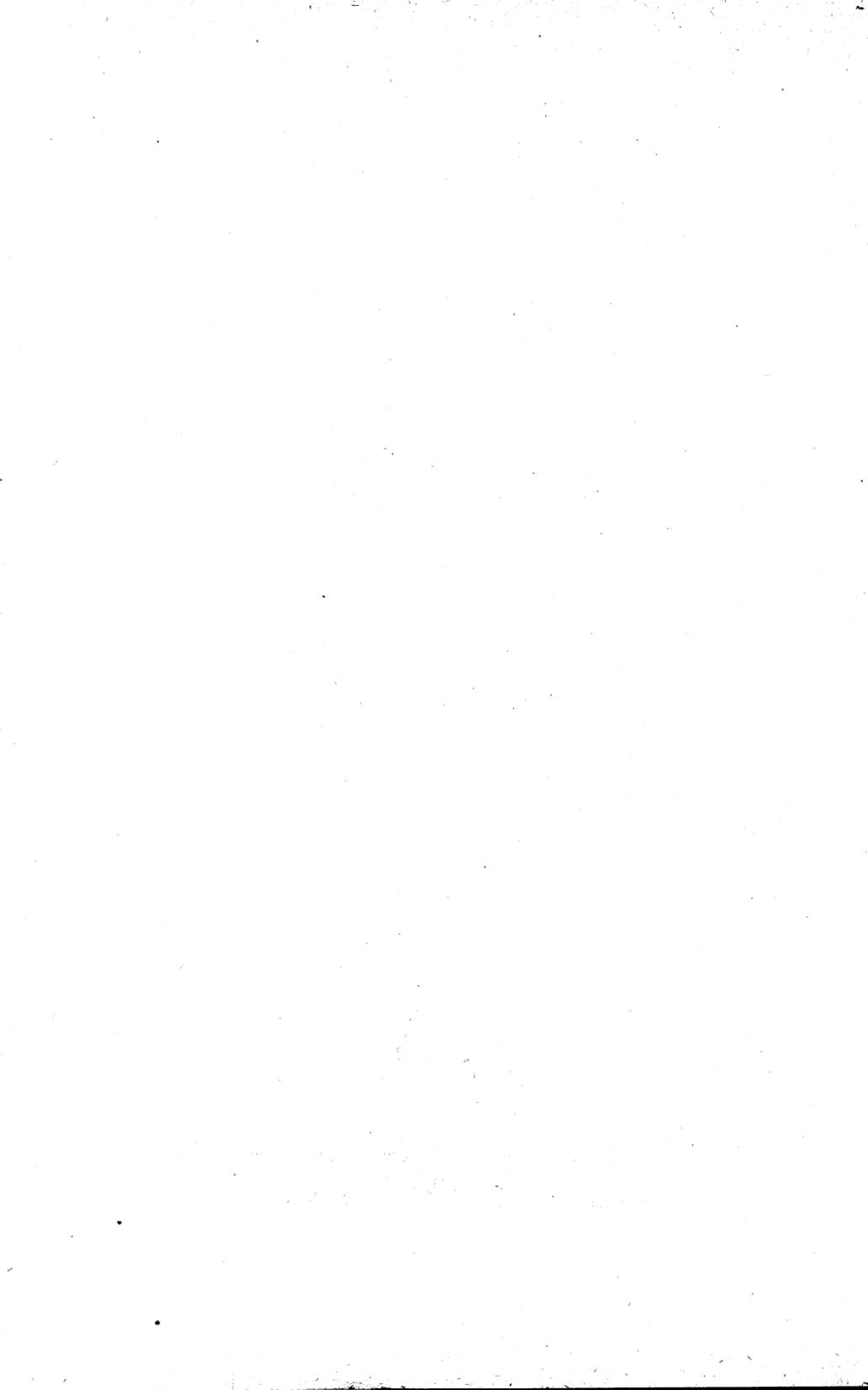
OF THE

STATE OF WISCONSIN.

PUBLISHED BY AUTHORITY,



MADISON
DEMOCRAT PRINTING COMPANY, STATE PRINTER
1898



REPORT OF THE FORESTRY COMMISSION.

To the Honorable, the Legislature of the State of Wisconsin:

The commission which was appointed by the governor, pursuant to chapter 229 of the laws of 1897, for the purposes defined in said statute, and which is composed of Geo. B. Burrows, H. C. Putnam and Ernest Bruncken, respectfully submit the following report:

The commission was organized on June 15, 1897, by the election of George B. Burrows as chairman and Ernest Bruncken as secretary. As it seemed imperative to the proper fulfillment of the objects of the commission to have a more definite knowledge than was then obtainable of the actual, present condition of the Wisconsin forests, an arrangement was made with the State Geological and Natural History Survey and the Forestry Division of the U. S. Department of Agriculture, for the making of such an inquiry. The result of that investigation may be found in the bulletin of the Geological Survey on "The Forest Resources of Northern Wisconsin," by Filibert Roth. The thanks of this commission are due to the gentlemen connected with the two institutions named, and particularly to Prof. Birge of the Geological Survey; Dr. B. E. Fernow, late chief of the U. S. Forestry Division; Prof. Filibert Roth, now of Cornell University, and Prof. L. S. Cheney of the State University, for the invaluable assistance thus rendered. The following report is in no small measure based on the data so ascertained.

GENERAL INTRODUCTION.

The meaning of the word forestry is still somewhat unfamiliar to many people in the United States, and to a misapprehension of its meaning may be ascribed a good deal of opposition encountered by the advocates of improved forestry methods. Many persons imagine it to be synonymous with arboriculture, or the planting and care of trees. In reality that is but a branch of the subject, and as far as Wisconsin is concerned, by no means one of the most important. Forestry is simply the management of lands grown with forests. Its object is to derive from such lands

the greatest possible profit for the owner. The interest of the state in forestry lies in part in the direct financial return it may obtain from forests owned by it; and in part in certain indirect benefits conferred on its people by the existence and rational exploitation of forests. Every owner of timber lands who carries on logging operations, or sells firewood or railway ties, is engaged in forestry. It is clear, therefore, that the introduction of improved forestry methods is of the greatest importance to the lumber industry and every other industry which gets its raw material from the forests, as well as to the people of the state at large. The plan advocated in the past, with more or less success, by well-meaning people, of reserving certain portions of natural forest as so-called "parks" and allowing them to remain unutilized wildernesses cannot be dignified by the name of rational forestry. The reasons which have most commonly been given for that policy have been of a sentimental nature. Its advocates have spoken of the beauty of the primeval woods and the good influence a temporary return to nature must have on persons overwrought by the extreme stress of modern civilization. But these benefits can be obtained equally well if not better by a forest which is made to serve the needs of the people in the way of lumber and other sylvatic products. Moreover, an uncared-for forest surrounded by a populous community is sure to fall a victim to fire and become practically a desert in the course of a few decades. The reservation plan, therefore, is inefficient and wasteful. It must give way to a more economical and business-like policy.

Forestry is merely a particular form of agriculture. Where one has the choice of growing on a given tract of land grain and the ordinary farm products, or timber of any kind, the principal question should be simply: Which will pay best, considering all the circumstances of the case? Where a state has large tracts of forest land, which may either be converted into agricultural land or remain forest, it also should propound to itself the question: How can the greatest possible amount of wealth be derived from these lands, having regard to long periods of time and all the surrounding conditions? If the answer is: By turning these lands into farms, then the policy of the state should be to encourage that result. If the answer is: By preserving and properly managing the forests growing on them, then the state should pass such laws as will help to accomplish that object.

Wisconsin has in its unsettled portions many thousand acres of fertile lands which can without doubt be put to no better use than to get them into the possession of industrious settlers under as easy conditions as possible, who will soon make for them-

selves farms and become a prosperous, intelligent and contented community. They may be safely trusted to retain on their homesteads enough of the forest now covering the land, for the purposes of a farming region, just as the farmers of the southern part of the state are doing. But there are also in this state large tracts where the returns which could fairly be expected from farming operations are disproportionate to the labor and capital required to wring a crop from the inferior soil. Yet these same lands, so uninviting to the husbandman, have in the past borne magnificent crops of pine and other timber, and there is no reason to doubt that they would, under proper care, produce in the future other crops of timber still more magnificent. It will be the part of wisdom, therefore, for the state to adopt a policy which will encourage the use of such lands for the purpose of raising timber crops rather than agricultural crops proper.

There are other reasons which should prompt a wise government to take steps looking towards the maintenance and management of an adequate area as forest. In the first place, the various industries deriving their raw material from the existing forests are by far the most important economic interest of Wisconsin, except agriculture. According to the state census of 1895, the aggregate value of the lumber and wood manufacturing industries of Wisconsin was \$58,971,000. This does not include the value of the pulpwood used in our paper mills; of charcoal and allied materials; of the enormous number of railroad ties, telegraph poles, fence posts and similar products of the forest; nor the value of the tanbark derived from our hemlock groves, or any of the minor products of our forest industries. If this vast industry should disappear on account of the disappearance of the forests, it would work nothing short of an economic revolution in the state. Many thousands of men who now derive their support from work in the mills and factories would find their occupation gone, and while a few would undoubtedly become farmers, the great majority of them would leave for other states. What effect such a loss of population would have on the prosperity of the whole state it is needless to picture.

Again, the influence of the removal of forests on water-flow and climate is one of the most important reasons why the state should pass laws calculated to preserve a reasonable area of land under forest cover. This phase of the subject is adequately treated in the report on the forest conditions of Northern Wisconsin, mentioned above, and it is superfluous to dwell again on the subject in this place.

An economic consideration of no small importance is the effect

a destruction of forests will have on the steadily growing business of entertaining summer residents and tourists. Hundreds of thousands of dollars are now spent every year in this state by travelers from other sections. But what attracts these people is our lakes and forests. The former are to no small degree dependent for their beauty and their very existence on the latter. With the removal of the forest, this source of income, which ought to grow from year to year, would be lost to our people.

Finally, it should not be forgotten that the question of forest preservation is one of guarding our people against a heavy burden of taxation. The sale of forest lands has in the past produced a large revenue to the state treasury. That source of revenue must, in the nature of things, soon disappear. But the experience of other countries has shown that forests, owned and managed by the state, can be made to contribute greatly to the public revenues. Ought not a wise legislation to consider whether Wisconsin cannot in the future derive such a revenue from its forests in order to help to bear the necessary expenses of the government, which will otherwise have to be met by taxing the people?

Taking it for admitted that it is worth while to pass laws on the subject of forestry, we will now discuss the question as to what measures should be taken by the state in this matter. The first question to be considered will be that of fire protection; then will come the question of the relative advantages of public and private ownership of forests; and finally the consideration of practicable steps for the fostering of either system of management.

FOREST FIRES.

Without some effective system of protection against forest fires, there is no hope of placing the forest industries of Wisconsin on a stable basis. This matter is of more urgent necessity than anything else connected with the subject. The enormous injury done to the forests of the state by fire is fully set forth in the report on Forest Conditions. But the tale there told refers only to the material in the forests themselves. It says nothing of the homesteads, villages and cities destroyed, nor of the untold misery caused by the destruction of human life in such appalling disasters as the Phillips fire, which is still fresh in the memory of the people, or the horrible occurrences at Turtle Lake, Cumberland and elsewhere, during the fall of 1898.

The prevention of forest fires is clearly as much a duty of the public authorities as the prevention and extinguishment of fires in cities. If the expenditure of money for that purpose is necessary, the people will not grudge it any more than they refuse to be taxed for the maintenance of fire departments in cities. If it is found that the expense of guarding against fires is too great for the slender means of the towns and counties in the forest districts, it is but fair that the state at large should contribute, for the whole state will be benefited by the result.

For some years there has been on our statute books a law designed to establish a forest and marsh fire police, and there is no doubt that much good has been accomplished by its administration. The way in which it has worked, together with many wise suggestions as to its improvement, will be found in the biennial report of the state forest warden, Mr. Egbert Wyman. There is consequently no need, in further legislation, to depart from the direction already taken. All that is required is a further development of the measures already adopted.

The amendments so required, in the opinion of this commission, are as follows:

1. There should be an adequate machinery for the supervision of the local fire wardens. This supervision is now entrusted to the chief clerk of the land office, who may appoint one clerk in said office as his deputy. These two officials have important other duties to perform which keep them in Madison. They cannot possibly devote much of their time to work in the field. There is consequently no means of seeing to it that the local wardens do their duty. It stands to reason that a warden who through incapacity or negligence fails to see that fires in his district are prevented or extinguished as far as possible, is as bad if not worse than no warden at all.

2. The officials appointed to supervise the local wardens should have power themselves to begin proceedings against violators of the fire laws, and it should be the duty of the district attorneys to prosecute such cases whenever called upon. At present is left to the discretion of district attorneys whether they will prosecute or not.

3. Local wardens should be encouraged to enforce the penal clauses of the fire law by being given one-half of the fines imposed after conviction through their instrumentality.

4. It is not fair that the towns in which fires occur should bear the whole expense of the fire police. The prevention of forest fires is a matter which is of the utmost importance to the whole state, as well as to the immediate neighborhood. The

towns in which forest fires are most likely to do damage are mostly among those least able to expend money for their prevention and extinguishment. It would be both fair and prudent, if the state cares to have forest fires prevented, to have the towns reimbursed by the state for one-half of all expenses incurred under the forest fire law. The fact that all such bills must first be audited and allowed by the town boards will be a guarantee against excessive and fraudulent claims, as the town supervisors will presumably have means of ascertaining the facts which state officials at a distance might often lack.

The exact manner in which these improvements of the fire law can be effected will be discussed below in the detailed comment on the bill accompanying this report. But a few words should be added here as to what may and what may not be reasonably expected in the way of preventing this arch-enemy of Wisconsin forests. It would be too much to hope for an entire disappearance of destructive forest fires in the near future. That goal cannot approximately be reached until the entire forest area of the state has been brought into a condition of cultivation such as is known in the forests of Prussia and Saxony. As long as lumbering operations leave a mass of uncared for debris; as long as there are hundreds of square miles with practically no roads; and as long as hunters and woodsmen are careless in leaving camp fires unguarded at a distance of miles from the nearest settlement, so long there will be forest fires. On the other hand, it is unworthy of the prudence and energy of the American people to submit to the annual infliction of such a calamity with the stolidity of Turks, as if they were unavoidable like earthquakes. It should not be forgotten that practically every forest fire is the result of the culpable negligence, or worse, of some individual. Moreover, every forest fire has a very small beginning and can at first easily be put out. A community which allows the smoke of small fires to arise for days at a time, during a dry season, without taking steps to extinguish them, has only itself to blame if finally it is overtaken by such frightful disasters as the Phillips fire of 1894, or the fires of the fall of 1898.

The occurrences in Barron County during the latter season, when hundreds of settlers lost all they had, and still greater calamities were with difficulty averted, has called public attention to this matter of forest fires with renewed force. The charity of the people of the state has not failed to attempt an alleviation of the suffering. The power of the state has been called in for the same purpose, and properly so. But would it not be more humane, more prudent, and at the same time more economical, if

the state took the necessary steps to prevent the recurrence of such things? Even when one looks at the matter simply from the lowest standpoint of dollars and cents, it is plain that the people of the stricken community as well as the state at large would be much better off if they spent a few hundred dollars annually for the proper policing of the threatened districts. The damage done by the fires of last autumn is not confined to the immediate destruction of property and the injury done to the soil. Far more serious is the injury arising from the set-back which the settlement and development of every locality must receive in which such disasters threaten the new-comer. To fail in doing everything possible to remedy this evil, even at much greater expense than will actually be necessary, would justly expose the representatives of the people to the charge of having flagrantly neglected the duties with which they are entrusted.

The ultimate object of every effective fire law must be to make it impossible for any fire to get a start anywhere without coming at once under the observation of some one who will make it his business to put it out or to notify immediately the nearest fire warden who will attend to its extinguishment. To accomplish this end it is necessary not only to appoint a large number of local fire wardens, but above all to foster the development of a public opinion among the people of the forest districts, which will frown upon negligence in the handling of fire in the woods as a disgraceful crime. Every means should be used to create such a public opinion where it does not now exist, and to this end the school, the press, the pulpit and every other possible agency should be used.

With these principles firmly held in view there is every reason to believe that legislation can be so shaped that forest fires will soon be a rare event among the mature timber, and will be the exception and not as now the rule, in areas of new growth. With such a condition of things, any money or effort spent on the permanent cultivation of forests will be a business-like proposition, sure to benefit the people by feeding its industries, and reasonably certain to yield a direct pecuniary return upon the investment.

PRIVATE AND PUBLIC MANAGEMENT OF FORESTS.

Apart from questions of climate and water flow the interest which the state has in the forests contained within its area is of

a twofold nature. In the first place, they may be considered as a source of public revenue; in the second place, they are of importance as one of the most important sources of the wealth of the people. A revenue may be obtained from the forests by taxing them as other property is taxed. Or the state may own forests and manage them for profit as a private owner of forest lands would. Important as forests are considered as sources of revenue to the state, this consideration is greatly overshadowed in the case of Wisconsin, by their importance as the foundation of industries and the producers of certain necessities of civilized life.

From whichever side, however, the question is approached, the state, in framing its policy, must solve the question whether it is of greater advantage if the forests are owned by the state and its subdivisions; or by private corporations and individuals, or whether a mixed system is the best. It has not, heretofore, been the policy of the state to hold forest lands permanently, let alone to go into the business of managing them for profit. Any departure from the present policy must justify itself by showing that the permanent maintenance of forests is not likely to be accomplished if left entirely to private interests. To show merely that state ownership would produce a revenue is not sufficient. For there might be many reasons why one would rather raise such revenues in a different manner. But the protection of the wealth and industry of the people is the foremost consideration, and if that can be assured only by state management, then state management should be adopted, no matter how radical a departure from precedent such a policy might appear.

PRIVATE OWNERSHIP.

Forests will be maintained by private individuals and associations on one condition only. They must see a fair prospect for a reasonable profit on the capital invested in them. It is true that a few scattered tracts may be kept here and there by wealthy persons or clubs for the purposes of pleasure grounds or game preserves. But such tracts would be too small in their aggregate extent to rely upon for the forests of which the people of the state stand in need. The main question, then, to be considered in this connection is: Have we any assurance that forestry in Wisconsin, aside from lumbering in the manner now prevailing, will be so profitable in the near future as to attract investors?

Wood crops are of slow growth; the age at which it is most profitable to cut down a tract of forest is under ordinary circumstances the time when the value of the annual increase of timber equals the interest on the investment, together with the cost of management. If the cutting is delayed longer, the progressive decay of the trees which have gone beyond their full maturity decreases the value of the annual increase to a figure below the annual cost, and the owners lose instead of gaining every year. If the cutting takes place earlier, the full amount of timber which might be realized from the tract is not harvested. Now this age, for white pine, is in the neighborhood of a hundred years, for most of the other valuable timber trees, a similarly high one, and only a few species of inferior quality have a materially shorter period within which to reach maturity. It is true that the final cut is not the only revenue which the forest yields. At intervals during the period of growth, much valuable material may be removed from it by thinnings and improvement cuttings, and under favorable conditions there may be a revenue from certain by-products, as berries, game, etc. But all this will never amount to a very considerable pecuniary yield.

Under these conditions a forest owner cannot expect a regular annual profit out of his investment, unless he has tracts of timber in all stages of maturity, from the seedling to the tree ripe for the axe, so that he may cut and market sufficient material every year to yield a profit on the whole investment. It is clear therefore that forestry, as a business by itself, must be conducted on a very large scale in order to be profitable. In Wisconsin, where there are now practically no cultivated forests, a private owner would have to possess so large an amount of land covered with the original forest, that he could divide it up into a hundred lots, each large enough to yield timber sufficient to pay a profit on the whole investment, less so much material as could be culled from the other lots, and yet leave their yield large enough when their respective time for cutting arrived.

Such ideal conditions are unattainable. In the vast majority of cases a private owner in Wisconsin, who wishes to make his forests permanently profitable, will find himself obliged, after he has removed the merchantable timber originally found, to wait a more or less prolonged period before he can expect additional revenue. If he owns, as most men do, lands which are entirely denuded of timber, only his children or grandchildren will see a new final harvest. The final yield may be amply sufficient to pay for the costs of management, together with the accrued interest on the capital invested. But a man cannot live

on profits which will not flow into his pockets until fifty or a hundred years from now. It is very unlikely, therefore, that any investors will undertake the task of caring for the denuded lands in Wisconsin, while the tedious process of restocking them is going on. Here and there a large corporation may see its way clear to take up such an enterprise, and occasionally an individual man of wealth may sink some of his fortune in restocking limited areas for the benefit of his descendants. But the greater portion of denuded lands will no doubt be left by their owners to grow up into useless brushlands, as has been the custom heretofore.

Nor is there any reason to believe that the pine lands still stocked with merchantable timber, as far as they are in private hands, will be treated differently, in the future, from the methods now prevailing. The dread of destruction by fire, as well as the growing scarcity of pine, and the burden of taxation, will cause lumbermen to cut trees of every size that will make a merchantable log, long before they have reached their maturity. The exigencies of the lumber business, as now conducted everywhere in this country, demand that the largest possible amount of cash be realized immediately from any given tract of timber land. Wisconsin lumber concerns would be quite unable to compete with those of other states if they pursued a different policy.

Even in those countries where lumbering is usually done with due regard to the reproduction of the crop, private owners constantly succumb to the temptation of converting growing forests into cash by premature cutting. Financial embarrassments or the hope of investing the proceeds in enterprises which promise higher profits than forestry, are sufficient to make them forget the interests of the community or future generations. It is therefore the policy of most of these countries, notably the German states and France, to gradually do away with private forests, and large sums are annually expended by these governments to add by the purchase of private lands to the already extensive area of state forests.

There is one class of forest lands to which the considerations above detailed do not apply. Farmers in all parts of the state follow the wise custom of maintaining "timber lots" for the supply of firewood, fencing materials, and similar uses. Unfortunately these tracts are often treated in so unskillful a manner that they constantly deteriorate. The best trees are culled out year after year, and no care is taken for their reproduction, so that after a while only runts and worthless species remain.

Moreover, very often no regard is had for the maintenance of a proper soil cover and windmantle, so that the soil becomes progressively less fertile. It is clearly the duty of the state to aid farmers in obtaining the necessary information for the management of these valuable portions of agricultural holdings, just as information on other subjects is spread by means of the Agricultural Experiment Station, Farmers' Institutes, etc. Furthermore, large quantities of excellent hardwood lumber, suitable for manufacturing purposes, are annually wasted as firewood for the lack of a market. The few trees of this kind, annually cut in a given farming region, are not in the aggregate sufficient to warrant the erection of a saw mill in the neighborhood. If there were a sufficient tract of forest land, apart from the farm timber lots, in the vicinity to supply the required amount of material to a mill, the farmers would share in the market so provided, and be able to dispose of some of their timber at profitable prices. So it appears that even aside from climatic considerations the settlers who are now turning a portion of the forest lands in the northern part of the state into farms are directly interested in keeping another portion permanently under forest cover.

Leaving out of account these farm timber lots, which by themselves are utterly inadequate to provide the extent of forest needed in Wisconsin, there is very little prospect of private capital being attracted into forestry as a business. If the state is to possess forests and lumber industries in the future, it must rely principally on public action. The state must gradually and with as little of a burden on the taxpayers as possible acquire a sufficient extent of forest area. Next it must establish the necessary machinery to protect, supervise and manage these forests on business principles. This machinery should be very simple in its incipiency, but so arranged that it can easily be extended as the need for it arises and the financial condition of the department warrants. In this way the state will be enabled to furnish to the lumbering and other industries which draw their raw material from forests a permanent supply. Private capital will feel secure in investing in enterprises which need not be afraid of having their raw material run out, while the people will find their taxes materially reduced by the revenues the state will derive from its forests. This is the condition of things existing in most countries of Europe, as well as in British India and other lands where a business-like forestry policy has been adopted.

This leads us naturally to a consideration of the public lands still existing in the state of Wisconsin.

PUBLIC LANDS.

According to the data furnished this commission by the land office there were on the 1st day of September, 1898, 364,000 acres of state land remaining unsold. Nearly all of this land is covered with forest and but a small proportion is reasonably fit for agriculture, although a considerable amount might be made so by proper drainage. Most of these tracts are rather scattered, it being a comparatively rare thing to find a considerable number of forties in a contiguous tract.

By far the greater part of these lands were obtained by the state under the swamp land act of 1850 and much of it is actual swamp. There are some school lands left, but very little university and agricultural college land. There is also a moderate amount of indemnity land. In addition there are in the state, outside of Indian reservations, nearly 500,000 acres of government land, subject to entry under the homestead law.

Heretofore it has been the policy of the state to dispose of its lands as fast as possible. As long as there was no provision made for the proper care of the forests covering most of these tracts, that was undoubtedly the wisest plan, for without such care the standing timber was sure to become a prey to fire and windfalls, without any benefit to the state. But if it is decided that there shall be in the future state forests properly cared for and protected, it would evidently be absurd to sell the small remnant of forest land still belonging to the people and afterwards purchasing new lands which have already been deprived of their merchantable timber and cannot furnish a revenue for a long series of years. Very little of these state lands will be purchased by actual settlers for agricultural purposes. The buyers will be lumbermen who will remove the merchantable timber and leave the denuded lands to become useless wastes, as so many thousands of acres of similar land have already been left. The proceeds of the sale of these lands are paid to the school and normal funds, and in part to the counties within the limits of which they are situated. Over the school lands the legislature has no control. The land commissioners, however, may withhold such lands from sale whenever they shall deem it expedient. (Const., Art. X, Sec. 8.) Over the lands granted by the act of 1850, the legislature has practically unlimited control. This has been established by a long line of decisions in both the state and federal courts. The legislature has acted accordingly by devoting one-half of these lands to the support of the normal

schools, while the other half is given to the respective counties. It would be obviously unwise to deprive these beneficiaries of the revenues to be derived from these lands. But if one considers that most of them are now sold for less than their fair value, and certainly for much less than they will be worth in the future, it is evident that the beneficiaries would be the gainers if the sale were stopped entirely for the present. The pine and other merchantable timber on these lands is in such condition that good business policy demands its removal just as soon as feasible with due regard to transportation and marketing facilities. In all the mature woods the annual increase of material is about balanced by the annual decay. But under the conditions now prevailing in the state, fire, windfalls and the consequent damage by insects, destroy so much good timber every year that the loss cannot be approximately made up by the annual increase through natural growth. Consequently the state forests are suffering a constant deterioration. This process can be stopped in no way save by the removal, as soon as practicable, of the dead and down timber and such standing pine, at least as is in danger of destruction. The rational and business-like way of procedure would be to sell the timber which is to be removed without parting with the land. The logging should be done by the purchasers under the supervision of the state and with due regard to the reproduction of the timber by leaving a sufficient number of seed trees and guarding against fire. The proceeds of the timber sales should be paid over to the proper beneficiaries, and it is not unreasonable to expect that the latter would realize in this manner as large amounts as they now obtain from the sale of the fee. The lands, however, would remain the property of the state, and if properly cared for would in time produce a new revenue, far greater than the first.

The objection is sometimes raised to the maintenance of large tracts of public lands within a county that the development of the region is thereby retarded, and that the county loses the taxes which the land would yield if held by private parties. It needs no very complicated chain of reasoning to show that these objections are ill-founded and short-sighted. The development of all our northern counties has heretofore been based far more on the lumber industry than on farming. In all those districts where the soil is inferior this will continue to be the case. Even in the hardwood districts, where the soil is well adapted to agriculture, the disappearance of the forest industries would be a serious calamity. There are now dozens of cities and villages where the inhabitants have begun to wonder what will become of

them when the timber is gone and the mills close down. Everybody has seen settlements very prosperous ten years ago, which are now abandoned by almost all their former inhabitants. The lands which it is proposed to keep permanently in the hands of the state are of the kind which do not attract the agricultural settler. After the timber growing on them has been cut they will, if left to themselves, become wastes, and what will then be the fate of the villages situated in their midst? They will have neither the industries depending on the forests, nor the trade derived from a prospering farming country. Real estate and improvements will lose their value, and the inhabitants will have to move to regions where the people have better business sense. So it is clear that every measure which tends to put the forest industries on a permanent footing is of the highest benefit and absolutely essential to the continuous development of every county which has within it tracts of non-agricultural lands.

The objection based upon the supposed necessity of taxing these lands is equally short-sighted. Pine lands are productive of taxes only as long as merchantable timber is standing on them. Experience has shown that many owners of pine lands will not pay taxes on them after the timber is cut. Even if they did, the value of cut-over lands is so small that the revenue produced is hardly worth counting. On the other hand, a considerable tract of land, held by the state, properly guarded and managed as a forest should be, will produce a continuous revenue, part of which will in many cases go directly to the county. In addition the forest will, directly and indirectly, give employment to a large number of people who will pay taxes on property accumulated by them, so that in the end the county and town treasuries will receive much larger sums than they ever will under the present system.

If the sale of state lands is stopped entirely for the present it follows by no means that not another forty of state land should ever be sold. After a proper forestry administration has been established, one of its first duties will naturally be to examine the precise conditions of every part of the public domain. If it be found that any particular tract by reason of soil, condition or location, would be more economically used as a farm than as a forest, there is no reason why it should not be sold by the state.

The lands owned by the government are somewhat larger in extent than those of the state. They are substantially of the same character as the state lands. The greater portion of them will never be required by actual settlers for farming purposes. In the meantime the timber growing on them is liable to the

same process of deterioration and destruction as that on the state lands. It would obviously be desirable that the state obtain title to these lands so that they could be treated in the same manner as the state lands now owned by it. It seems reasonable to hope that Congress, if it sees that the state is prepared to manage these lands in a way which will preserve and improve the forests growing thereon, will prefer to cede them rather than have them remain useless. Every effort should therefore be made by the people of the state and its representatives at the seat of the federal government, to obtain for the state title to the government lands within her borders.

The combined areas of the government and present state lands would be a sufficient nucleus for a system of state forests. They would by no means be large enough for all future times, but they would be a good beginning.

THE DENUDED LANDS.

By far the most difficult part of the forest problem in Wisconsin is the question as to what shall be done with those large tracts now existing which have been denuded of the pine formerly growing on them, and now lie idle, subject to the ravages of the fire. The present condition of these tracts and their prospects for the future are ably treated in the Report on Forest Conditions. It appears that in their present uncared-for situation they are liable to a progressive deterioration of the soil. That most of them are capable, however, of restocking themselves with pine without expensive silvicultural operations, provided fires are kept out, is just as certain. Some parts of these lands, of considerable extent in the aggregate, but small in proportion to the whole area, have already begun to restock themselves in this manner. The opinion which formerly widely prevailed, that white pine did not reproduce itself on areas where it has been cut off, but gave way to poplar and other inferior species, has been proven erroneous by observations both in this state and elsewhere.

While it is perfectly feasible to restock these lands with pine, it is quite as undeniably true that the bulk of them will not be so restocked as long as they are left to themselves. If no steps are taken towards a proper care these millions of acres will become wildernesses of scrub, covered according to circumstances with crippled aspen, runts of jack pine, dwarf oak, or even merely coarse grass and sweet fern. That condition they will remain in

for an indefinite period. This is no mere assumption, but precisely what has happened in other states where similar conditions have prevailed. In all parts of the East, from Massachusetts to the Carolinas, immense tracts exist which formerly were covered with heavy timber. The forests were cut and the lands left to themselves in the same improvident manner which we have heretofore followed. Now these tracts, although they are still called woodlands, do not produce a single stick of saw timber, nor even firewood, that could be sold at a reasonable price per cord. This condition has existed in some cases for a hundred years and there is not the slightest prospect for improvement. These lands might as well not exist as far as the prosperity of the community is concerned in which they are situated. Similar tracts can be seen within ten miles of Chicago.

Some people may think that these cut-over lands will in time become of agricultural importance. They cite the fact that here and there a settler makes his home in such places, because he can buy the land for almost nothing, or because he has been misled by ignorance and inexperience. By taking advantage of every depression, where the wash from the adjacent slopes may have improved the soil a little, he manages to raise a pitiable crop. But what can such isolated attempts amount to when the entire area of this character comes into play? On other tracts with slightly better soil it may be possible to raise potatoes with profit. But the prosperity of a whole community cannot be based on a single crop. If lands of this character had any prospects of agricultural use one would think that the large sandy tracts along the Wisconsin river, in Adams and other counties which have long been settled, would not remain idle as they do. Moreover, the settlers on such lands, as far as there are any, are usually immigrants who bring from their native countries very low standards of living. By dint of having very few needs as compared with farmers of native American, German, British or Scandinavian nationality, they manage to make a living where those others would starve. But they remain miserably poor all their lives, ignorant and unambitious. It certainly cannot be in the interest of the state of Wisconsin to people large portions of its territory with "crackers."

There is consequently no prospect that our denuded lands will be put to agricultural uses. The only way, therefore, in which they can be made useful is to restock them with the timber which formerly covered them and for which they are peculiarly adapted. But we have already seen that it is improbable that any considerable number of private parties will find it profitable to take the steps which are necessary to reach this end. Yet most

of these lands are owned by private parties, principally the lumbering concerns which have cut the pine. It seems therefore that it would be necessary for the state to first obtain title to these lands.

Other states, notably New York and Pennsylvania, have within a few years appropriated very large amounts of money for the purchase of lands on which state forests are to be maintained. Wisconsin is hardly in a position, at present, to take a similar step. As these lands may, with proper management, be made to pay some revenue in thirty years, it would be simplest to purchase them with scrip payable after thirty years. The lands would then practically pay for themselves. Unfortunately the state constitution prohibits the incurring of a state debt for such a purpose. It might be feasible, however, to authorize the counties to purchase lands for scrip of this character. The lands so purchased by the counties might be managed under the supervision of the state and the net revenues credited to the counties. The commission has not deemed it expedient to insert in the bill submitted provisions for dealing with this branch of the subject. It has been thought better to establish at first the necessary machinery to begin a systematic protection and management of the forests. The disposition to be made of the cut-over lands may be left to a succeeding legislature. There are many different interests to be consulted, and a few years of actual experience in state forestry management may suggest a better plan of handling the subject than could now be devised.

At the same time, some portions of the cut-over lands are in such condition as to be dealt with more easily. Over 250,000 acres are held by counties on tax deeds; considerably more than this is incumbered with outstanding tax certificates held by the counties. There is no reason to expect that any appreciable amount of these certificates will ever be redeemed. The owners have simply abandoned these lands as worthless after taking off the pine timber. The present policy of the counties is to rid themselves of the lands so held at any price whatsoever. Large tracts are often sold at a nominal price. The revenue so obtained is so exceedingly small, that it need hardly be taken into consideration. Even after the lands are sold the assessed value is so low that the annual tax derived from them is almost nothing. If these tracts, on the other hand, were held permanently by the counties and properly cared for they would soon become of value. After twenty-five or thirty years they would be productive of some revenue, enough to make up for the small loss in taxes, and after a somewhat longer period they might in some cases be sufficient to pay from their annual revenue the greater

part of the county expenses. In the meantime they would furnish employment to numerous people and greatly enhance the prosperity of the whole community. It is therefore eminently proper to authorize counties to hold such lands permanently and provide for their management in conjunction with the state forests.

It has been intimated to the commissioners by several large owners of cut-over pine lands that they would be willing to cede considerable tracts of this character to the state provided the latter would take steps to restock them. The state ought certainly not to refuse such generous offers, and provision is made in the bill herewith submitted for the acceptance of such gifts.

METHODS OF MANAGEMENT.

It will be a long time before the forests of Wisconsin will be in the high state of productiveness which prevails in the forests of Germany or France. This is not so much, as is imagined by some people, on account of lower cost of production or higher prices of lumber in the old countries. The lower wages of Europe are about counterbalanced by the greater effectiveness of American, highly paid labor, aided by improved tools and implements which Yankee ingenuity never fails to devise. On the other hand the prices of lumber are pretty nearly the same in this country and Europe. There is no reason why an American forest could not with profit to the owner be brought into as high a state of cultivation, produce as much lumber to the acre and be as thoroughly protected as a Prussian state forest. It is all a question of time and the judicious application of capital. If this state had unlimited funds at its disposal every acre of forest land could at once be treated in such a way that there would be no question of the final profitableness of the enterprise. But it would require time to do so. Roads would have to be built; working plans made; large tracts would have to be planted with seedlings, and elsewhere the natural growth of trees would have to be supplemented by planting and seeding. As funds to undertake such wholesale operations are not to be had, the state must do the best it can with the means available. It will simply depend on the amount of capital which you may be willing to invest in the enterprise, how long it will take until the natural forest, with its low productiveness, shall everywhere be replaced by the cultivated forest which yields an incomparably larger amount of lumber to the acre.

As this subject is still a new one to the people and there will

be a natural reluctance to expend large amounts of money on what to many may seem an experiment, the commission has thought best to recommend a very small beginning. It would obviously be uneconomical to do less than is required to prevent a further loss to the state by fire and other deteriorating influences. Moreover it will be necessary, under any system of management, to first of all obtain the necessary data regarding the natural and economic conditions of each future forest tract, so that an intelligent and business-like plan for its treatment can be devised. It will also be necessary to institute a series of investigations and experiments with regard to the life conditions of forest trees, for the experiences had in foreign countries or other states of the Union do not invariably admit of direct application under our conditions. Finally it would be desirable for some time to come to devote some effort to the spread of information regarding forestry matters among the people.

After a beginning has been made in this way, the time will come for more detailed treatment of the various portions of the forest area. It will very likely be found expedient to divide the whole into districts and place a forester at the head of each. The duty of such an official it will then be first of all to make a plan for the manner of work in his territory. This plan must be based on the most careful consideration of the topographical and soil conditions of the district; on the nature of the trees which it is intended to grow thereon; the cost of the various operations required; the facilities for the transportation of the forest products; the circumstances of the markets; and a multitude of other things which will have a bearing on the success of the undertaking as a business enterprise. This making of a working plan is the most difficult and important part of the whole forestry business. As it requires a long period of years before the produce of a forest can be marketed a mistake made at the beginning can in many cases never be rectified and may doom a whole district to unprofitableness.

The ideal goal to be reached in all forestry enterprises is to make every part of the forest area yield a profit, without reducing the capacity for repeating the operation. The profit must be computed on the whole investment, in which is to be included: The rental value of the land; the interest on capital invested in permanent plant; cost of supplies and labor, together with interest on the capital expended for these purposes; charges of depreciation in permanent plant; cost of administration; and possibly other items dependent on the particular circumstances of each case. (In the case of private ownership taxes must be added.)

Where very large tracts of forest are managed together, as

will be the case in the future state forests of Wisconsin, it will undoubtedly be found that there are some parts of the entire system which cannot be made to yield a profit, on account of poor natural conditions or bad marketing facilities. In such cases it is sufficient if the entire system is made to show a profit. The unprofitable tracts must be carried along with as little outlay as possible, and may at least be made to yield some revenue. It would be good policy for the state to maintain a system of forests even if it had to run every part of it at a loss. For it needs forests in order to keep its climate from deteriorating and to maintain the prosperity of its people. But there is no reason to doubt that forest management in Wisconsin will yield a reasonable profit.

After the making of the working plan for each district will come the actual work of improving the forest. The natural growth of the trees which it is decided to raise is fostered by all the means of the forester's art, while the undesirable species are gradually got rid of and their new growth prevented. Wherever advisable, the natural re-forestation is aided by planting or seeding; as time progresses, improvement cuttings are made, and a partial revenue obtained. In the meantime roads are built, and gradually everything is brought into readiness for the final harvest. This takes place at different times in different portions of the district, so that after a while the district will contain lots stocked with trees of all stages of growth and a portion become ripe for marketing every year.

These stages in the development of a forestry system cannot be reached in Wisconsin for many years, and it is not necessary to provide the needed administrative machinery at the present time. For the tasks which will be the first to be performed and which have been enumerated above, the bill submitted by the commission contains the following plan:

THE FORESTRY DEPARTMENT.

There is no reason why the number of administrative boards should be increased. The attorney general, state treasurer and secretary of state, who now perform the same functions for the land office, may just as well constitute the supervising and auditing authorities of the forestry department. This will save the expense connected with the work even of unpaid commissions. The bill, therefore, provides for the appointment of a Superintendent of Forests by the officials named, who shall be the responsible head of the department, subject, however, to the finan-

cial control of the board composed of those officers. The success and efficiency of the department will depend principally on the qualifications of the superintendent, who should be a man of executive ability, and sufficiently interested in the work to familiarize himself with all its details as they gradually develop. In order to obtain such a man it is necessary to offer a fair salary, and to make the incumbent feel secure enough in his position to make it worth his while to put in his best efforts. For this reason the bill makes the term of the superintendent a long one, and one that overlaps with the terms of the elective state officers. A change in the office of superintendent every two years, according to the exigencies of party politics, would be fatal to the whole enterprise. Such a system may do well enough in offices the routine of which is established and has only to be followed by the new incumbent. But in the proposed forestry department everything must first be created. Methods, routine, precedents, and this formative period will extend over a long series of years.

The subordinate officials ought to be appointed by the head of the department. There need be but few of these at the start. A deputy and a clerk or two is all that will be required at first, in addition to the local fire wardens and such temporary help in the field as may be from time to time required. The increase of the permanent department staff ought, of course, not to be left to the arbitrary judgment of the superintendent. The bill lodges this duty with the supervising board. With this board is also left the authority to decide on the selection of lands for the permanent forest reserve, the making of contracts for the cutting, etc., of timber on state lands, the duty of auditing the accounts of the department, etc.

The duties of the superintendent and his assistants cannot be defined in detail, as much regarding the methods to be pursued must necessarily depend on circumstances as they arise from time to time. The amount and kind of work done by the department will depend in no small degree upon the size of the appropriation which each succeeding legislature will make for the purpose. The larger the appropriations, the more speedily can the forest system be brought into such shape that it will first pay for its own support and after a while become a source of profit. But under any circumstances will a certain period elapse before this can be done.

The first task to be done is, of course, the selection of the land, which must be made, evidently, in conjunction with the present land office. Even if no more state lands are to be sold, the work of the latter department will continue for a long while, to wind

up the transactions now pending with purchasers of land. But its work will contract considerably, and some of the expense incurred for the forest department will be saved on the score of the land office. After the new department has obtained the lands which it is to manage, it must find out what they are like. For the purpose of forest management this must of course be done much more thoroughly than has been done as to a part of the state domain by the land office. This part of the work will take, therefore, years to accomplish, and this survey of the land, together with the supervision of the local fire wardens, will take a large portion of the time of the superintendent and his assistant.

The supervision of the local fire police should be of such a character that not only should the department receive regular reports from the local wardens, but the latter should be liable, at any unforeseen moment, to receive a visit from the superintendent, who should have authority to call upon them for explanation in cases of neglect of duty, to remove them when found guilty, and in flagrant cases of negligence to enforce a penalty by prosecution in court.

A number of experiment stations, which should at the same time serve as model forests, should be established by the department at the earliest possible moment. The experiments to be conducted should be of a twofold nature: Partly sylvicultural, partly of a more strictly biological sort, and for this purpose the department ought to have a right to count on the assistance of other scientific agents of the state, notably members of the Geological Survey and the State University. Experiments, of course, are a source of expense, and the value of these stations as model forests will necessarily be impaired by the outlay for experimentation. But means will probably be found to keep the two objects of these stations as much apart as possible. Regarding the expense of this part of the work, it should again be remembered that much or little can be accomplished with them according to the amount of money available. Even a small appropriation, however, should be fruitful of some good. It would be superfluous to enter upon the detail of the work to be done at these stations. It will be of a more or less technical character, and will be useful in proportion to the skill of the persons in charge of it.

Much importance ought to be attached, especially during the infancy of the system, to the educational work of the department. The superintendent and his assistant should be men competent to deliver popular lectures on forestry subjects, and should do so whenever opportunity arises in schools, colleges, farmers' institutes, etc. They should also, from time to time, publish bulle-

tins containing information regarding forestry affairs, and use all other available means to instruct the people in their specialty. The forest system of the state cannot be successful unless it has that energetic and sympathetic support of the people which its importance for the public welfare so richly deserves.

The provisions of the bill submitted herewith, which have not been touched upon above, easily explain themselves. They are of an administrative nature, designed to bring the proposed new department into harmony with the general scheme of the state administration.

RECAPITULATION.

In conclusion, this commission wishes to emphasize once more the following points:

1. The establishment of a system of state forests is a necessity, not only for the protection of the climate and waterflow of the state, but for the purpose of providing a sufficient supply of raw material to the various lumber and wood industries of the state. The necessary steps toward this end cannot be delayed any longer with safety to the public welfare.

2. The establishment of such a system is entirely feasible. There are no obstacles of a physical, economic or financial nature which cannot with moderate effort be overcome.

3. It will take a series of years and some initiatory outlay to fairly establish such a system. However, the money so expended at first will after a reasonable time return into the state treasury, and the system, once fairly established, will yield a large annual income that will to a proportionate extent do away with the necessity of taxation.

4. The idea of managing forests by the state so as to obtain an annual revenue and yet not destroy the forests themselves is not the project of a dreaming idealist, nor an experiment which may or may not succeed, but has long been an accomplished fact in nearly every highly civilized community outside of the United States, including countries of such widely different conditions as Germany, France, Russia and British India.

Respectfully submitted,

GEO. B. BURROWS.
H. C. PUTNAM.
ERNEST BRUNCKEN.
State Forestry Commission.

APPENDIX.

FORESTRY REFORM MEASURES ADOPTED BY
OTHER STATES.

By Ernest Bruncken, Secy. State Forestry Commission.

The states of the union in which more substantial progress has been made towards a business-like treatment of forestry resources than in any other are New York and Pennsylvania. The secretary of the commission was sent to acquaint himself personally with the conditions existing and measures adopted in those states, and found that while in many details the steps there taken cannot be imitated under Wisconsin conditions, in the main the circumstances of those states are the same as here, and substantially the same remedies which have served there will be useful to correct existing evils in Wisconsin. The secretary takes this opportunity to express his thanks to the state officials and other gentlemen in the states visited by him, for the many courtesies extended to him during his investigations.

The state of New York is distinguished above many others for the comparatively small loss it has, of late years, suffered from forest fires. This is due in part to natural conditions, in part to adequate and well-enforced legislation. The forests of New York, as is well known, are practically all located in the region of the Adirondack Mountains. They are prevailingly composed of broad-leaved species, especially birches and maple, but there is a very considerable amount of spruce and fir intermingled with the hardwood trees. The spruce is the principal tree furnishing commercial timber. Of white pine there is practically no merchantable supply left; but in many places young pine was observed growing up vigorously. It is said that pine comes up on abandoned farm clearings, while in places where the original growth was destroyed by fire white birch and aspen are the successors. To what extent this observation is correct, we are unable to judge. Certain it is that many tracts were observed covered with aspen of sufficient size to serve for pulpwood if a market could be found for them. In other places the aspen

serves as a nurse tree for spruce, which kills them off when it is of sufficient size to overshadow them. This is illustrated by numerous photographs in the office of the superintendent of forests in Albany. On the higher mountain slopes the trees of all kinds become very scrubby and quite valueless for lumbering purposes. Some of the highest peaks, such as Mount Marcy, are entirely devoid of forest growth for a considerable distance from their tops down. In fact there are very large tracts of land in this region which on account of their mountainous character and consequent inaccessibility will never be made to yield a profit, or even a considerable revenue, even with the most careful methods of management.

Agriculture in the New York forest region plays a very subordinate part and is confined chiefly to the broader valleys. Lumbering operations are now carried on principally on the western side of the mountain complex, while little is done in the northern and eastern portions. The logging is confined largely to spruce timber, which is cut both for lumber and pulp. Little hardwood is utilized in any way, and there are very few factories located in the region, such as are now established in so many places in Wisconsin for the purpose of converting the hardwood timber into furniture and other wood articles. This is no doubt due largely to the lack of proper transportation facilities. In many parts of the region the native population seems to be dependent for their support chiefly on the large number of summer residents and tourists whom they serve as hotel keepers, guides, etc. Considerable tracts of land are owned by clubs and associations, who maintain them as pleasure reserves. These clubs usually take fairly good care of their holdings, build and maintain roads, prevent fires, the cutting of timber, undue fishing and hunting, and in many ways improve the land for the purposes of a summer resort. These private reserves are usually located in the most picturesque regions, where on account of the mountainous topography and the remoteness from railways logging would be unprofitable. It is customary for these associations to allow the legitimate use of their lands by tourists and pleasure seekers, under reasonable regulations and the payment of a fair toll. On the whole the system works to the advantage both of the permanent residents of the neighborhood, and of the tourist and summer guests. It would seem to be highly desirable that some of the hundreds of beautiful lakes and other interesting places in Wisconsin, which more and more attract pleasure seekers, to the benefit of the entire state, were in similar manner improved by voluntary associations, and forests, game and fish protected against wanton and negligent destruction.

When lumbering operations have ceased in a forest region the danger of fire becomes much diminished. At least in Wisconsin it is well known that fires are most likely to take their start from the dry rubbish on places where trees have been recently felled. Similarly, in New York it is found that of the comparatively few fires occurring most are met within the western part of the district where logging is now actively pursued. Even there it is rare for a fire to do much damage, as it is almost immediately discovered and extinguished. Since the present system of fire police has come into existence, it has been found that the educational effect upon the people is even of more importance than the direct results of the law. Public opinion in the Adirondacks now severely condemns all manner of carelessness in the handling of fire in the woods, and people no longer consider destructive forest fires as inevitable calamities like earthquakes and tornadoes, as is still so widely the case in Wisconsin.

The machinery by which these and other desirable results are obtained in the state of New York may be briefly described as follows:

There is a board of five Commissioners of Fisheries, Game and Forests, the members of which receive an annual salary of \$2,500 each, with an additional amount of \$800 per annum each for expenses. The president of the board receives \$3,000 per annum and expenses. The staff of employes at the headquarters consists of a superintendent and eight other employes of various grades, with salaries ranging from \$2,500 for the superintendent down to \$1,200 each for two stenographers. In addition to this, there are two assistant chief protectors, with \$1,500 a year, and thirty-eight protectors who receive \$500 a year as salaries, with expenses to the amount of \$450 per annum. The assistant chief protectors and protectors are required to spend all their time in the woods and make daily reports as to their doings to the office at Albany. Finally there are large numbers of special protectors, appointed from the residents of the forest districts, who receive \$1.50 per day for work actually done. In addition, both protectors and special protectors receive one-half of all fines and judgments recovered through their efforts. The per diem of the special protectors is paid by the local authorities, but one-half of it is returned to the latter from the state treasury.

It will be seen that the duties of the protectors are purely of a police nature, as no forestry work proper is as yet done by the state. They see to the enforcement of the game and fish laws, the fire protection, and guard against trespasses on the state land. The policy of the department is to appoint so many special protectors that no fire can get a start anywhere without coming at

once under the notice of a protector. It should be remembered that an important part of the department's work is the care of the oyster beds in the waters of the state. Three of the protectors are specially detailed for this duty. All officers and employes are in constant communication with the headquarters, and convenient blanks of various kinds are provided on which they can make their reports and accounts.

There is a special body appointed from the members of the department, known as the Forest Preserve Board. This body has the duty of purchasing lands within the Adirondack district, to be added to the forest reserve of the state. Until a few years ago the state lands, like those of Wisconsin, consisted of badly scattered tracts. The state intends to purchase sufficient land to create a continuous forest area belonging to the people. A million dollars has already been appropriated for this purpose, and additional sums will undoubtedly be provided in the future. Unfortunately the state constitution prohibits all cutting of timber on state land. Such wastefulness can be but temporary and must soon give way to the adoption of real forestry methods.

There are many other provisions on the statute book of New York which are very instructive. For instance, a farmer who wishes to burn brush on his land must give notice to the town supervisor, whose duty it then becomes to be present and superintend such burning. The state lands within any township are assessed for local taxes, the same as private lands, and the taxes paid to the local authorities out of the state treasury. This overcomes the frequent objection of the local population to have large tracts of public lands within their limits.

While the duties of the Forestry Department of New York are at present confined rather to the protection of forests as they now are, and do not extend to their management for revenue and possible profit, the state has of late taken a first step in that direction also. It has endowed a School of Forestry, to be a part and under the management of Cornell University. The object of the school is a double one: First, to train students in the whole science and art of forestry so as to fit them for the independent management of forest estates, either private or public. For this purpose a four years' course of study is provided. The entrance requirements for this course are substantially the same as those for other under-graduate departments of the university, including a fair amount of mathematics, Latin, German, French, etc. The first two years of study are devoted to a thorough grounding in the various auxiliary sciences of forestry, such as mathematics, geology, botany, political economy. Not until the junior year will technical studies in forestry begin. These will

include, among other things, sylviculture, dendrology, the physical and commercial qualities of woods and timbers, methods of logging and manufacturing lumber, and other forest products, political economy with special reference to the transportation and marketing of forest products, forest mensuration and valuation (that is, the computing of the prospective annual increase of wood in a growing forest, and the profit or revenue that may be expected from it at any given period, with similar and allied subjects), and the history of forestry. During the summer months, and the whole of the fourth year, the student will be expected to put in most of his time in practical work in the woods and particularly the demonstration forest which it is contemplated the school shall possess.

The second object of the school is to furnish to such students as do not intend to become professional foresters, but who desire an acquaintance with forestry matters as a help in their future business as lumbermen, manufacturers, farmers, and so forth, a comprehensive insight into the subject. For this purpose, elective courses are offered on sylviculture, forest economy and similar subjects.

The trustees of Cornell University have selected as the dean and head professor of the new school Dr. B. E. Fernow, well known as one of the foremost authorities in this country in all matters pertaining to forestry and for twelve years chief of the Forestry Division of the United States. One of his assistants is Mr. Filibert Roth, formerly of Wisconsin, who is the author of the report on the forest resources of this state, just published by the Geological Survey.

The demonstration forest mentioned above is to be one of the most important branches of the new forestry school. It is to contain about 30,000 acres of wood land. The intention of the dean and faculty is not only to use this area for the purpose of giving the students opportunities in practical work, but to demonstrate by it how a forest estate can be managed so as to yield a regular revenue and profit, instead of giving a revenue once and thereafter remaining a worthless waste. Furthermore, it is to be used as an experiment station, where questions regarding sylviculture, timber physics, and allied matters are to be investigated. As was stated to the secretary of this commission by Dr. Fernow, the two last named objects are somewhat inconsistent. Experiments always cost money, and the profitableness of the enterprise will thereby to some extent be jeopardized. But it is intended to keep the books of the department in such a way that the extra expense caused by the experiments can be separated at

a glance, so as to allow a computation regarding the actual profits if no such expenses had been incurred.

The question now arises: What lessons can Wisconsin derive from the experience of New York? The most obvious one is evidently the possibility of keeping in check the ravages of fire. While with our large areas of pine slashings and half-dried tamarack swamps we may not be able, for some time, to control fire so completely as is being done in New York, we can certainly do far more than has been accomplished heretofore. The existing fire laws should be improved in all details in which they may have proven ineffectual; there should be a more effective machinery for the supervision and control of the local fire wardens; above all, every possible means should be used to create a public sentiment which will regard negligence in the handling of fire in the woods or marshes as a crime, to be met not only with legal punishment, but with the severest reprobation by all respectable persons. It seems that not only the newspapers, but also the public schools, farmers' institutes and similar organizations, could do very much in this direction.

Another thought which suggests itself by the example of New York is that the State University might well do its share both in the training of professional foresters and the instruction of non-professional students in forestry matters. Finally, it would seem that Wisconsin ought to imitate New York in the establishment of one or more experiment stations for the investigation of matters relating to the subject, for the conditions under which forests must be managed in Wisconsin are by no means the same as those in New York.

PENNSYLVANIA.

In the state of Pennsylvania the forestry problem has in many respects a different aspect from what it has in New York. The evil which there first led to the appropriation of money by the state for forestry purposes was the rapid washing away of the soil from mountain sides denuded of tree growth, the consequent sanding up of the rivers of the state, and the pernicious alternation of very low stages of water with the most violent and destructive freshets. In consequence an effort is now being made to acquire on the part of the state all lands located on the head waters of rivers, and to keep them under a permanent forest cover. The state forests which Pennsylvania will possess in the future will therefore be mostly in the nature of protective forests, as are so many forests in Switzerland and other Alpine coun-

tries. The question of making the capital invested in these lands yield a profit, or even any kind of revenue to partially reimburse the state for the necessary annual administrative expenses, seems to have been entirely left out of view, for the present at least. Yet the people of Pennsylvania are willing to be taxed heavily for this purpose because they understand that they gain a hundredfold indirectly by the protection which the forests afford to the agricultural and industrial lands of the commonwealth.

Pennsylvania has not yet been so successful in the prevention of forest fires as New York. On the contrary, its loss from this source during the last few years has been enormous. This may be due, in part, to more disadvantageous natural conditions; but probably the principal reason is that the fire police system of the state is far less effective than that of New York, and that public opinion has not yet been sufficiently educated to appreciate the criminality of negligence. There are no special fire wardens, but it is made the duty of constables and county commissioners to extinguish forest fires. For this purpose they may call out the posse comitatus. The compensation of persons officially engaged in fighting fire is \$1.50 per day, which is paid in equal shares by the county and the state. It is clear that however effective such a system may be for extinguishing fires, it fails entirely to provide for the quick detection of fires just starting. This, however, is the most important part of the task, for only by not allowing fires to get headway can great damage be prevented.

The forestry administration of Pennsylvania at present forms a division of the state Department of Agriculture. It has at its disposal a fund of \$15,000 for all contingent expenses for the period of two years, besides the salaries of its employes. In addition to this, there is an unlimited appropriation for the payment of fire fighters and the purchase of land at the river sources.

The work of the division has so far been principally one of investigation and education. The conditions of water flow in the rivers have been thoroughly investigated by a capable engineer, while the bulletins and reports issued contain much valuable information regarding the forest conditions of the state. One of the principal duties of the commissioner is to assist in the purchase, on behalf of the state, of forest preserve lands. Three great preserves, neither to be less than 40,000 acres in extent, are to be established around the upper portions of the Delaware, Susquehanna and Ohio rivers. Besides, the law provides, that the state may acquire all lands on which taxes remain unpaid. There are considerable tracts in Pennsylvania, as there are in

Wisconsin, from which the timber of merchantable species and size has been cut and for which the proprietors do not care to pay taxes. These lands are often of great value as protective forests, and unless the state acquired and policed them, the remaining wood growth would be destroyed and the soil washed into the rivers. When the secretary of this commission was at Harrisburg, he learned of a company operating an oil well located in the midst of a large timber tract, which had just offered to convey this tract to the state on condition that they might continue to work the oil well. The hope of the company was simply that the state would maintain a sufficient fire police in the forest to render the oil property more secure.

A solution of the question of the taxation of forest property has been attempted in Pennsylvania by the passage of a law allowing a rebate of taxes on lands with growing timber, under certain conditions. The tax question in Pennsylvania seems to be simpler than in Wisconsin for this reason: A very large proportion of timber lands is owned by mining companies. The population of these districts is often in its majority composed of employes of these companies. It is easy, therefore, for these corporations to obtain the election of local officials who will not only not assess their lands exorbitantly, but on the contrary sometimes give them an unfair advantage over other property.

On the whole it may be said that the conditions in Pennsylvania are so different from those prevailing in Wisconsin, that few of the details of forestry administration are directly applicable to our state. We are fortunately so situated that the question of maintaining forests merely for the protection of our streams in places where we would rather see farms is of minor importance. We have no appreciable extent of land which is in danger of being turned into desert by the washing away of soil unless forests are maintained thereon. No doubt the quantity and regularity of water flow in many of our rivers will be benefited by the maintaining of forests about their sources. But this benefit will as a general rule be gained incidentally, if we select our future forest areas from other points of view. On the other hand, there is probably in all Wisconsin no forty-acre lot of woodland which under proper management cannot be made to yield a profit. It follows that this state need spend no money, either in the way of land purchases or administrative expenses, for purely protective forests, without expectation of pecuniary reimbursement. All properly expended funds in Wisconsin forest management may be expected to sooner or later return to the state treasury. How fortunate our state is situated in this respect will be understood when it is considered that even with

the excellent methods of management prevailing in Prussia, Bavaria or Saxony, there are large tracts of forests in those states from which no financial return is expected either at present or in the future. There is one valuable lesson to be derived from Pennsylvania, however, and that is the intelligence of the people of that state, who are willing to sink large amounts of money without hope of return simply because they appreciate the immense indirect advantages they will derive from a proper care of their forests.

ONTARIO.

The province of Ontario has for some years maintained a Bureau of Forestry, which is a subordinate branch of the Crown Lands Department. This bureau has published a number of interesting reports containing much valuable information. No steps looking towards a more profitable management of public lands have as yet been taken by the government of the province, except that a commission was recently appointed charged with investigating the question of reproducing forests on the cut-over timber lands. This commission has visited all parts of the forest area of the province, and will soon make its final report. Like the Geological Survey report on the forest resources of Wisconsin, the Ontario commissioners have come to the conclusion that practically the only obstacle to the natural reproduction of pine forests is the fire. They laugh at the notion still entertained by some Wisconsin lumbermen that there must be a "rotation of crops" and that white pine will not grow again in places where it has been cut down.

The fire laws of Ontario are fairly effective. The timber lands belonging to the crown are not sold, but lumbermen can purchase the right to cut timber on these lands, under certain restrictions and regulations. One of these regulations requires that "fire rangers" must be employed on each timber berth, as a district on which logging privileges have been sold is called. The commission will advise the Parliament to add to this requirement the employment of a similar system of fire rangers on the lands not comprised in any timber berth. The commissioners also favor the permanent reservation and management, by the government itself, of all timber lands not fit for agricultural purposes. Another recommendation will be to prohibit the cutting of trees less than twelve inches in diameter two feet from the ground by any holder of a logging license.

The most important thing to be learned from the experience of Ontario seems to be the unwisdom of selling the fee of public lands of a non-agricultural character. Such lands are too apt to be despoiled of their present timber supply and allowed to lie waste ever after, as the example of so many tracts in Wisconsin shows. Ontario, on the other hand, after having received quite as high a revenue from the sale of logging licenses as Wisconsin received from the disposal of the land itself, still retains the land and may proceed to care for them so that in due time they may again become a source of revenue to the public treasury.

A BILL

TO ESTABLISH A SYSTEM OF STATE FORESTS AND
PROVIDE FOR THE MANAGEMENT OF
THE SAME.

The People of the State of Wisconsin, Represented in Senate and Assembly, Do Enact as Follows:

Section 1. There is hereby established a Department of State Forests, to be organized and to perform such duties as herein provided. The secretary of state, the state treasurer and the attorney general shall constitute *ex officio* the Board of State Forest Commissioners, and as such shall perform such duties and exercise such authority as may be conferred upon them by law. Any two members of said board shall constitute a quorum for the transaction of all business.

Section 2. As soon as may be after this law shall have gone into effect the said board shall appoint some competent person as superintendent of State Forests. Such superintendent shall hold office for the term of five years, and shall receive a salary of three thousand dollars per annum, payable out of the state treasury in the same manner as the salaries of other state officers are paid. It shall be the duty of the Superintendent of State Forests, to keep in his office all necessary records concerning the lands under his care as provided herein; to manage such lands according to the most approved principles of the art of forestry; and to perform such other duties as may be prescribed by law. The said superintendent shall appoint an assistant who shall hold office during good behavior and shall receive a salary of two thousand dollars per annum, payable out of the state treasury in the same manner as the salaries of other state officers are paid. The Superintendent of State Forests may also appoint such clerks, district foresters and other subordinate officials as the said Board of State Forest Commissioners may authorize, and may engage such temporary help and services as may from time to time become necessary. All permanent employes of the department shall hold office during good behavior, unless otherwise provided by law. Their salaries shall be fixed by the Board of State Forest Commissioners, and shall be paid

from the state treasury in the same manner as the salaries of other state employes are paid. The said Board may, with the advice of the Superintendent, adopt and from time to time amend regulations for the examination, competitive or otherwise, of all applicants for positions in the employ of the department, and if such regulations shall be adopted all appointments shall thereafter be made by the superintendent in accordance with them. The superintendent and assistant superintendent shall each annually receive the sum of five hundred dollars for expenses of travel. Other officers and employes of the Department of State Forests who may be obliged to travel on business of the department shall be allowed their actual expenses.

Section 3. The said Board of State Forest Commissioners shall audit all the accounts of the Superintendent of State Forests and other officers and employes of the department, and no claim of any kind against the state, on account of the department of state forests, shall be paid without first being allowed by the said Board.

Section 4. The department of state forests shall be provided with convenient office accommodation at the city of Madison, and shall be furnished with all necessary stationery and other office supplies in the same manner as other departments are furnished.

Section 5. The sale of all lands belonging to the state, except such as are commonly denominated school and university lands, shall cease after this act shall have gone into effect, and no such land shall thereafter be sold except according to the provisions of this act; provided, however, that this act shall not be so construed as to affect in any manner the rights or interest of any person or persons to or in any of the lands belonging to the state which such person may have acquired previously to the day on which this act shall go into effect.

Section 6. All public lands so withdrawn from sale, and such other lands as the state may hereafter acquire for that purpose shall constitute the state forest reserve. As soon as practicable after this act shall go into effect the superintendent of state forests shall make a detailed inquiry into the character and condition of each parcel of land contained in said state forest reserve and acquire all information concerning the same which may be necessary for the purpose of proper forestry management. For this purpose he may engage all necessary help, and may use the records, maps, plats and other documents of the land office. All information so obtained shall be properly recorded and preserved in the office of said superintendent. If in the course of such investigation the said superintendent shall

come to the conclusion that it shall be for the best interest of the state that any particular parcel or parcels of the public lands be not reserved as a part of the state forest he shall so notify the Board of Public Land Commissioners, who may thereupon in their discretion proceed to sell such parcel or parcels of land in the manner provided by law. If at any time hereafter the Commissioners of Public Lands shall withdraw any school or university lands from sale they may authorize the superintendent of forests to manage such lands as a part of the state forests, and the superintendent shall thereupon have the same authority and the same duties regarding such lands as he has regarding other lands in the state forest reserve.

Section 7. The said Board of State Forest Commissioners are hereby authorized to accept on behalf of the state of Wisconsin any grant or grants of any lands within this state for forestry purposes. No such grant shall be accepted unless the attorney general shall first certify that he has investigated the title to such lands and that the proposed grantor has title to such lands, free from incumbrance.

Section 8. Any county which may now own or hereafter acquire any land suitable for forest growth by virtue of any tax deed or the foreclosure of any tax certificate is hereby authorized to maintain such land as a county forest reserve. Whenever the Board of Supervisors of any county shall by resolution decide to maintain such county forest reserve, they shall notify the superintendent of state forests, whose duty it shall thereupon become to supervise the management of such county forest. The board of supervisors of such county may annually appropriate a sum of money sufficient for the management of such county forest until the revenue derived therefrom shall be sufficient to pay for the expenses of the management of the same. All revenue derived from such county forest over and above the necessary expenses of the management of the same shall be paid into the county treasury. No expense of any kind shall be incurred by and become chargeable to the state on account of such county forests. The county board of supervisors may make all necessary rules and regulations concerning such county forest, subject, however, to the approval of the state forest superintendent.

Section 9. The superintendent of state forests shall as soon as practicable, with a view to the best possible financial return to the state, remove from the lands under his control all dead and down timber and such other timber as he may deem expedient, and sell the same at the best advantage in such a manner as the Board of State Forest Commissioners may prescribe. All con-

tracts for the cutting, logging, or sale of any timber in the state forests shall be signed, on behalf of the state, by the superintendent of forests, or in his absence by the assistant superintendent; provided that no such contract shall be of effect until it shall have been approved by the Board of State Forest Commissioners. All funds received from the sale of any timber, wood or other product of the state forests which shall be derived from any land known as School, University, Agricultural College, Normal School, Marathon County, Drainage or Indemnity land shall be paid into the respective fund into which the proceeds of the sale of such land may now be payable. The revenues from all other lands in the state forest reserve shall be paid into the general fund of the state.

Section 10. The superintendent of state forests shall have authority to build roads upon the lands in the state forest reserve; to cut and sell timber growing on and other products of such forests; erect all necessary buildings, fences or other structures; plant or sow trees; make all necessary rules and regulations for the maintenance and government of such forests, and do all other acts which may be necessary or expedient for the protection and rational management of said forests. Provided, however, that no improvement shall be made or other measure adopted involving an expense of more than one hundred dollars without having first been approved by the Board of State Forest Commissioners.

Section 11. The superintendent of state forests may from time to time purchase, in such manner as shall be prescribed by the Board of State Forest Commissioners, all supplies necessary for the proper conduct of work in the state forests.

Section 12. The superintendent of state forests shall as soon as practicable after this law shall have gone into effect, with the approval of the Board of State Forest Commissioners, establish one or more Forest Experiment Stations, on the lands belonging to the state forest reserve, for the purpose of conducting researches into the best methods of forest management under the conditions prevailing in the various portions of Wisconsin. For the purpose of making such researches the superintendent may co-operate whenever expedient with the State University, the State Geological and Natural History Survey, the various scientific bureaus of the government of the United States, and other institutions of a like character. The results of such investigation shall from time to time be printed and published in the same manner as other public documents are published, and distributed in such manner as the Board of State Forest Commissioners shall determine. They shall as far as possible be written

in non-technical language, so as to be easily understood by the general public.

Section 13. It shall be the duty of the superintendent and the assistant superintendent, whenever possible without interference with their other duties, to respond to invitations to deliver lectures on subjects regarding the value and nature of sound forestry methods, by Farmers' Institutes, colleges, schools and similar institutions, and they shall in every other available form seek to spread information concerning forestry matters among the public.

Section 14. The offices of state forest warden and deputy forest warden as defined in section 1636b of the Wisconsin Statutes of 1898 are hereby abolished. Their duties are transferred to the superintendent of state forests except as modified by this act. It shall be the duty of the said state superintendent to see that the provisions of law for the prevention or extinguishment of forest and marsh fires are faithfully executed, and for that purpose to formulate all necessary and proper regulations for the government of the several fire wardens, and to supervise them in the performance of their duties. Whenever the superintendent of state forests or any officer of the department of state forests, or any fire warden shall have good reason to believe that an offense has been committed by any person or persons against any of such provisions, it shall be his duty to cause the arrest of the party suspected of such offense, and he shall immediately notify the district attorney of the proper county, whose duty it shall be to prosecute such person or persons. Every fire warden who shall bring about the conviction of any person or persons of violation of any law designed for protection against forest and marsh fires, shall receive one-half of the fine imposed upon such party.

Section 15. The superintendent of state forests shall appoint one or more fire wardens in each organized township, and shall keep a register of the name and postoffice address of each. Provided that if he shall be of the opinion that no useful purpose could be served by the appointment of a fire warden in any particular town he may omit such an appointment, unless the town board of supervisors of such town shall request him to make such an appointment. Every fire warden shall before entering upon the duties of his office take and subscribe the usual oath of office and file the same with the superintendent. He shall take all necessary precaution to prevent the improper setting or progress of fire in his or adjoining towns within eighty rods of the line of his town whenever the fire warden of the adjoining town is unable or unwilling to do so, and shall, when credibly informed

that a fire has been improperly set or allowed to burn in any territory within his jurisdiction take such steps as shall be necessary to prevent and in all proper cases to extinguish the fire. The fire wardens shall perform such further duties and receive such compensation as is now provided by law. Any fire warden may be removed from office by the superintendent of state forests for incompetence or neglect of duty.

Section 20. Section 1636e of the Wisconsin Statutes of 1898 is hereby repealed. It shall be the duty of the superintendent of forests or such other officer of the department of forests as he may designate, as far as practicable, from time to time to visit each fire warden and ascertain the manner in which he discharges the duties of his office.

Section 21. On or before the first day of December in each year the clerk of each town in which any money has been expended for the payment of any fire warden or the extinguishment of any forest or marsh fire in pursuance of section 19 of this act shall certify to the secretary of state the amount of money so expended. The secretary of state shall thereupon cause one-half of the sum so expended by such town to be paid out of the state treasury to the treasurer of such town.

Section 22. The superintendent of forests shall biennially make a report to the governor, showing the condition of the state forests, the revenues derived therefrom, the expenses incurred, and such other matters as he may deem proper. Such report shall be printed, published and distributed in so many copies and such manner as the governor may direct. The superintendent shall also submit to the legislature at its regular session, within ten days from the convening thereof, an itemized estimate of the expenditures which in his opinion will be necessary on behalf of the department of forests, during each of the ensuing two years.

Section 23. The expenses of the department of forests exclusive of any sums which may be paid to any town for money expended for the prevention or extinguishment of forest fires, during any one year, and exclusive of any money spent for the proper furnishing of the office of the department, and its supply with the necessary stationery and other office supplies, shall not exceed the sum of \$. per annum. No liability shall be incurred by said department in excess of such sum. A sufficient sum to defray all expenses authorized by this act is hereby annually appropriated.

Section 24. All acts and parts of acts conflicting with any of the provisions of this act are hereby repealed.

Section 25. This act shall be in effect from and after its passage and publication.



REPORT

OF THE

BOARD OF PRISON LABOR COMMISSIONERS.



MADISON, WIS.:
DEMOCRAT PRINTING COMPANY, STATE PRINTER
1899



REPORT
OF THE
BOARD OF PRISON LABOR COMMISSIONERS.

No. 119, S.]

[Published April 27, 1897.

CHAPTER 310.

AN ACT: Whereas, the governor in his annual message to the legislature has recommended an investigation into the result of the systems of prison labor adopted in other states; therefore, under the title of an act to appoint a non-salaried commission to inquire into and report concerning prison labor and making an appropriation.

The people of the state of Wisconsin, represented in senate and assembly, do enact as follows:

SECTION 1. Within sixty days from the passage of this act, the governor shall appoint three citizens of the state, who shall be known as the "board of prison labor commissioners," and who shall serve without compensation, and whose duty it shall be to investigate as far as they deem necessary, during the years of 1897 and 1898, into the conditions under which state and other convicts in this and other states are being employed. They shall also inquire into the matter of supplies usually purchased for the institutions which are conducted wholly or in part at the expense of the state; also the principal items of expense in conducting the Wisconsin prisons, and it shall be the duty of the officers and managers of such institutions within the state, and also of the state board of control, to render all reasonable facilities and information to such commissioners in making such investigation and inquiry.

SECTION 2. It shall be the duty of said commissioners to report to the next session of the legislature, the substance of their investigation and inquiries, together with such recommendations and plans as they may deem proper to make, having in view the objects of this act as expressed in its preamble.

SECTION 3. The actual traveling and other necessary expenses incurred by such commission, shall be reimbursed by the state, and upon presenta-

tion of itemized sworn bills of such cash outlays to the secretary of state, it shall be his duty, if satisfied that they are correct, to draw his warrant on the treasury for the amount, and there is hereby appropriated out of any moneys in the state treasury, not otherwise appropriated, a sum sufficient to carry out the provisions of this act, not exceeding fifteen hundred dollars.

SECTION 4. This act shall take effect and be in force from and after its passage and publication.

Approved April 23, 1897.

Pursuant to the above, His Excellency, Gov. Edward Scofield, appointed the following as members of the board:

David C. Green, New Insurance Building, Milwaukee.

Hon. B. A. Buffington, Eau Claire.

John L. Sturtevant, Waupaca.

To the Honorable, the Legislature of the State of Wisconsin:

The commissioners appointed in conformity to the foregoing Act of the Legislature, beg to report that they have diligently, carefully and to the best of their ability investigated the various phases of the employment of convict labor by visiting and inspecting, more particularly, the prisons, penitentiaries and reformatories of the older states, whose long and varied experience has given them a clearer conception as to the most satisfactory manner of employing the prison population.

The commissioners have carefully read the prison reports of some forty states, noting particularly the methods for utilizing the prison labor.

They were present at the National Prison congress held at Indianapolis in October last, so as to benefit by the reports and discussions of that body on the employment of convict labor. The commission held a protracted session at the Pfister hotel, Milwaukee, in November, giving an opportunity to the public to discuss the subject in a full and free manner.

Nearly the entire press of the state called attention to the meeting and the object in view. Circular and written

letters were sent to the various manufacturers throughout the state, asking their presence. The many labor organizations were invited to meet the commission to discuss the subject from their standpoint. The general public were asked to take part.

The session was very interesting, well attended, and the question of the employment of convict labor was fully discussed and covered a wide range of thought.

The board of control, Warden Roberts and Supt. Heg of Green Bay, were present at the Milwaukee session heretofore referred to, ready and competent to answer any questions and give any information desired.

The commissioners had an opportunity to feel the public pulse on this important question and to acquire knowledge from the addresses and discussions.

The conditions of the states differ so as to climate, topography and resources, that a solution of the problem in one state, satisfactory to that state, its people, and just to the prisoners, would be a different proposition in another state.

We would cite the state of California. The grain raised on the Pacific coast is not sent to the market in bulk, as with us, but is sacked. The sacks were not made on the Pacific coast, being mainly of foreign manufacture. The legislature appropriated a sum sufficient to install a complete plant in one of the prisons for making sacks, so as to use the convict labor to advantage. This did not interfere with the established industries of the state. It lessened the price of the product to the farming community. It is true, on the other hand, the prisoners are taught no industry to their advantage when they leave the prison walls. The citizens of the commonwealth, however, were satisfied.

In one of the other prisons of that state the convicts are engaged in quarrying and preparing stone for road work. In a climate as temperate as California, this class of work can be carried on to advantage. It is open air work the year through, but such would not be the case in a state

whose climate was severe and where roadmaking is at a standstill many months of the year.

We would also cite the state of Minnesota as working along the California line for some years so far as a portion of her convict labor is concerned. About one hundred hands are employed making binder twine, sold only to the farming interest of the state at a small advance over the cost of production. The legislature appropriated a sufficient sum for a complete plant for the purpose, at Stillwater, and for several years the business has been remunerative, the past year particularly so owing to the sagacity and business judgment of the warden in buying a large supply of fibre prior to the disturbance at Manila.

The commissioners looked the plant over very carefully and realized it was of great value to the agricultural interests of the state. On the other hand, the prisoner is not learning anything that would tend to his employment when again free, for the reason that boys and girls operate the same class of machines in the free market.

The major part of the prison population at Stillwater, however, is employed in making shoes for a firm at St. Paul.

In several of the southwestern states, coal is mined by the convict labor to supply the state institutions with fuel.

In some of the western mountain states, where the country is mainly rocky and is inhospitable, convicts are engaged in building prison walls, extending and improving the prisons, so as to give some some form of employment but with little pecuniary returns for the labor.

These references are made to demonstrate the fact that the conditions in the different states are so at variance as to preclude the possibility of a uniform convict labor system.

In many of the states, the prisoners are employed manufacturing goods on state account, in accordance with the demands of the market in their respective sections, enter-

ing into active competition with free labor so far as a limited quantity of prison-made goods can affect the market.

In other states, the labor of the convict is sold at a stipulated price per day, rarely over fifty cents for ten hours' work.

This convict labor is employed in the manufacture of chairs, boots and shoes, harness, bolts and nuts, hollow ware, brooms, brushes, whips, clothing, shirts, underwear, stockings and numerous other articles. The products, of course, all combined, are but a small factor when compared with the enormous production of free labor, but the contention is made that the output does fix the price on the same class of articles manufactured by free labor and thus cuts the price to such a point that the wages of the free workmen are reduced to an unjust figure; that it is a lever that can be used to the detriment of just wages.

Your commission found in its investigation that the great state of New York, after many years of experience with its convict labor, at times manufacturing on state account, next by leasing the convicts at a per day price, and at times working the convicts on lines of manufacture where the product was sold for so much per piece, finally concluded to establish a new system, which system has been in operation upwards of two years.

The New York legislature was forced by public opinion to take the step it did. The manufacturing and laboring element made such a hue and cry as to the unjustness of having the comparatively small amount of convict labor fix the wages, even in a measure, for the army of free industry, that the matter was taken up by the entire press of the state, and became really a political issue, so, in deference to the wishes of the people in general, convict labor was wiped out entirely, only to leave a lot of unfortunates in a deplorable condition. The prison discipline was hard to maintain and some of the convicts, from lack of employment, brooding over their unfortunate life, became insane. The condition was indeed pitiable, and the people of the state, through the legislature, saw that it would never do

to keep the prisoners in idleness. After much thought and consideration, a plan was evolved, viz., to utilize the labor of the convicts in manufacturing those articles consumed by the many state and semi-state institutions, and by those under the control of the counties and municipalities, in the various political divisions of the state, compelling by law the officers of the institutions, schools, etc., to purchase such supplies as the state manufactured in the prisons. A board was appointed whose duty it is to fix the price of the articles so sold to the state at as near the market price of a similar class of goods as possible. The statement made by Mr. C. V. Collins, superintendent of New York prisons, at the congress at Indianapolis is given below, which statement gives an excellent idea of the working of this system:

“The National Prison Association, whose annual convention was held in Indianapolis, brought out some interesting facts in regard to prison labor in the state of New York. C. V. Collins, superintendent of prisons for New York, reported that there are several prisons in that state. Each prison has its warden, or superintendent, while he is superintendent of them all, with offices in the state capitol at Albany. The prison labor laws of New York are of a character, he said, which can be applied in other states. ‘We have three thousand five hundred prisoners in our penitentiaries. Two years ago they were at work on contracts, when organized labor of the state demanded that the convicts be taken off the work which competed with the products of free labor. To take the men from the contracts meant either to find something else for them to do, or keep them in idleness at state expense. The plan we adopted has been in operation for two years, and has been found successful in every way. In 1896 the New York legislature appropriated \$500,000 to establish industries at the penitentiaries. At the same time it passed a law defining what products should be made, to whom they might be disposed, and how, and fixed a scheme for regulating values. It was decided that tinware, underwear and hosiery should be made at the Dannemora prison; the men at Auburn should make blankets, woolen cloth, and school furniture; at Sing Sing, boots and shoes should be made, as well as general office and school furniture. Lines of manufacture were chosen which should conflict as little as possible with other industries in the state. After making inquiries, it was found that not more than two hundred free men were at work on school furniture in New York state. There was one fine point to be decided in the disposition of our prison-made goods, and the attorney general of the state was asked to define it. It was, to what extent the state could force

consumers to take its goods. He held that a political division could be made up to include state, county and city offices and institutions, and that whatever they needed, which the prisons would make, they would have to buy. We are making the furniture for New York school houses. The furniture in the capitol at Albany is being turned out by the convict mechanics, and it is as good and as well made as we could buy in the open market. Every available man in the prisons is busy. At present we cannot fill half the orders which come to us from state, county and city institutions. The men work eight hours a day. The plan for dividing up the work, charging for it, and keeping account of it, has all been provided for. When any officer wants any of the prison products, he sends his orders to my office, which is the channel for reaching the makers. His order is then sent to the prison which makes what he wants. If he is in need of something which the convicts do not make, he receives a certificate that we cannot fill the order. This certificate is then taken by him to the open market, and enables him to buy what he wants. This prison labor system has had a good effect as a money-saver to the state, county and city institutions. Under the old system some officials made a practice of buying everything they needed in the open market, and the manufacturers divided the profits with them, but by the state making about everything needed, this has been done away with. In getting at valuations, the questions are referred to what is known as the board of classification. It is made up of the state comptroller, president of the lunacy commission, and others. The board meets once a month and adjusts prices which institutions must pay for prison-made goods. For instance, the board is told how much it is costing the Auburn prison to make a blanket. It is estimated what the blanket would be worth if sold in the open market, and the open market price is the one which an institution is charged for it. As far as possible, we buy our raw material in New York, but do not hesitate in going to other states for it. We do not consider whether our prison-made products are competing with the private manufacturers of other states. Our idea is first to look after the interests of the New Yorkers. We also have men at work in building state institutions, building roads, etc., and the plan works successfully. The whole result of the new labor prison plans is surprising. While the industries cost the state \$500,000 two years ago, they have turned back into the treasury \$624,000, and we still have the industries. We are not going to build new manufactories, but intend to expand the capacities of those which are now in operation.' "

It must be borne in mind that the machinery employed in the various shops is of the latest pattern, and the workshops are superintended by experts in each particular line. The state can buy its raw material as cheaply as any manufacturer. The convicts work eight hours per day. The

machines are gauged, as a rule, to run at a certain speed, and they are fed as promptly by convict as by free labor. Then, with convict labor estimated to be worth, by experts in prison management, all the way from 60 per cent. to 80 per cent., and equal to free labor, in many lines of manufacture, why should it not be profitable for the state of New York to manufacture for itself? It is a business proposition, if freed from political influences.

The quantity of goods made for the New York institutions by its convict labor, does take the place of the product of so much free labor and is, of course, competitive to that extent, but it is claimed it does not fix the price for the same kind of articles manufactured by free labor, nor does it affect the rate of wages paid to the artisan, as it did under the state account or contract plan, but the free labor fixes the price to be paid by the state.

This much is certain, the agitation has ceased, the manufacturer, the mechanic and the laborer are satisfied, and the question is removed from politics.

The New York state law is as follows:

Sections 105 and 107 of Chapter 429, of the Laws of 1896, as amended by Chapter 623, of the Laws of 1897.

Section 105. The superintendent of state prisons, and the superintendents of reformatories and penitentiaries, respectively, are authorized and directed to cause to be manufactured by the convicts in the prisons, reformatories, and penitentiaries, such articles as are needed and used therein and also such as are required by the state or political divisions thereof, and in the buildings, offices and public institutions owned or managed and controlled by the state, including articles and materials to be used in the erection of the buildings. All such articles manufactured in the state prisons, reformatories and penitentiaries, and not required for the use therein, may be furnished to the state, or to any political division thereof, or for or to any public institution owned or managed and controlled by the state, or any political division thereof, at and for such prices as shall be fixed and determined as hereinafter provided, upon the requisitions of the proper officials, trustees or managers thereof. *No articles so manufactured shall be purchased from any other source, for the state or public institutions of the state, or the political divisions thereof; unless said State Commission of Prisons shall certify that the same can not be furnished upon such requisitions, and no claim therefor shall be audited or paid without such certificate.*

107. The comptroller, the State Commission of Prisons and the superintendent of state prisons and the lunacy commission *are hereby constituted a board to be known as the Board of Classification*. Said board shall fix and determine the prices at which all labor performed, and all articles manufactured and furnished to the state, or the political divisions thereof, or to the public institutions thereof, shall be furnished, which prices shall be uniform to all, except that the prices for goods or labor furnished by the penitentiaries, to or for the county in which they are located, or the political divisions thereof, shall be fixed by the board of supervisors of such counties, except New York and Kings counties, in which the prices shall be fixed by the Commissioners of Charities and Correction, respectively. The prices shall be as near the usual market price for such labor and supplies as possible. The State Commission of Prisons shall devise and furnish to all such institutions a proper form for such requisition and the comptroller shall devise and furnish a proper system of accounts to be kept for all such transactions. *It shall also be the duty of the Board of Classification to classify the buildings, offices and institutions owned or managed and controlled by the State, and it shall fix and determine the styles, patterns, designs and qualities of the articles to be manufactured for such buildings, offices and public institutions in the penal institutions in this state. So far as practicable, all supplies used in such buildings, offices and public institutions shall be uniform for each class, and of the styles, patterns, designs and qualities th it can be manufactured in the penal institutions in this state.*

2. This act shall take effect immediately.

The passage of this act conforms the law to Section 29 of the Revised Constitution, which reads as follows:

COPY OF THE AMENDMENT.

ARTICLE III.

Section 29. The legislature shall, by law, provide for the occupation and employment of prisoners sentenced to the several state prisons, penitentiaries, jails and reformatories in the state; and on and after the first day of January, in the year one thousand eight hundred and ninety-seven, no person in any such prison, penitentiary, jail or reformatory, shall be required or allowed to work, while under sentence thereto, at any trade, industry or occupation, wherein or whereby his work, or the product or profit of his work, shall be farmed out, contracted, given or sold to any person, firm, association or corporation. This section shall not be construed to pre-

vent the legislature from providing that convicts may work for, and that the products of their labor may be disposed of to the state or any political division thereof, or for or to any public institution owned or managed and controlled by the state, or any political division thereof.

The great state of Massachusetts, whose penal institutions are looked after by men of genius, philanthropy and efficiency, is following in the wake of New York.

Public sentiment in the industrial state of Massachusetts has grown strongly averse to prison competition, and legislation has been framed looking to the use of the convict labor for the benefit of the state institutions.

There is a movement on foot in Massachusetts to utilize part of the labor of the convicts in cutting a canal across Cape Cod, which would require the labor of two thousand prisoners for six years. The recommendation to the legislature was made by the General Superintendent of Prisons, Mr. Frederick G. Pettigrove, in 1898.

After visiting the advanced prisons in the eastern states and several in the western states, your commission visited the state prison at Waupun, at a time when the state board of control was in session. Full opportunity was given to investigate the system in vogue. Every courtesy was extended by Warden Roberts.

The system of contracting the convict labor at Waupun is similar to that adopted in some of the other states, the idea being to make the prison self-supporting as nearly as possible, by the money received for convict labor at so much per day. Under the present system, it is run on a purely pecuniary basis. The idea of reformation is certainly secondary, and little reformation is attempted, for reformation always conflicts with dollars and cents, and the pecuniary advantages of reformation are not for the time being tangible.

The convict labor at Waupun is sold to M. D. Wells & Co., an Illinois corporation, for the sum of fifty cents per day per man, the contract requiring not less than three hundred convicts to be employed. These men work ten hours each working day.

The consideration paid for the convict labor by M. D. Wells & Co. does not mean that the state nets fifty cents per day for the labor of each convict worked by them. From the fifty cents per day received must be deducted the expenses borne by the state for guards while the convicts are at work, expense of power, fuel for warming the shops, electric lights, repairs of shops and shafting, insurance as well as interest on the investment for shop buildings.

The goods manufactured, it was stated by the shoe manufacturers of the state, at the session held in Milwaukee, competed sharply with the same grade or class of goods made by shoe factories in Wisconsin. It was not the quantity of goods that caused dissatisfaction of free labor, but the fixing of the price for free labor. It was claimed that the small percentage made in prison fixed the price on the entire output of the factories on the same class of goods.

The manufacturers and labor organizations feel that a great injustice is being done free labor. They claim they are taxed by the state to support a convict, yet the labor of that convict is sold at a low price to be worked on products that forces the profits or wages of the same tax payer to an unjustly low figure.

The competition of the immense shoe factories of New England, turning out in some instances as many as 15,000 pairs daily, at the smallest possible margin per pair, is one of the causes of the low price of wages in making the cheaper grades of shoes. The profits to the contractor of prison labor in this line, at present, must be small as compared with the profits when the competition was not so sharp and there was comparatively no over-production. The modern shoe machinery became the rapid multiplier of shoes, producing much faster than the consumption.

It is to be expected that a firm making a contract for prison labor will make all the profit possible and that can only be done by working the convicts ten hours per day and the intermingling of a large force of civilians among

the convicts in the prison shop, so that the stock and labor can be utilized to its fullest possible advantage. That the work of the convict is not equal in quantity hour per hour with free labor, is the contention of the contractors.

The work of the prisoners at Waupun is regulated by Warden Roberts so as to deal fairly with the prisoners and equitably with the contractor. The ever-shifting population of a prison is a drawback to the contractor. The education of men by the contractor entails some loss on them. The stock damaged is quite an item.

Prisoners prefer to labor, but work produced under force and without heart is not apt to be so good as when a man feels that his earnings are inuring to his benefit.

But the question is, cannot the state use its prison labor for its own benefit to better advantage than by leasing it? Should not the state be entitled to the entire earnings and profits of its prisons, and not give whatever profit there may be, to a contractor?

Advanced prison authorities agree that a prison should be isolated so that the prisoners should come in contact with the free world as little as possible. To be exiled in a measure, is part of the punishment—yet, the state of Wisconsin permits, every working day in the year, about one hundred citizens, men and boys, employes of the contractor having their homes in the city of Waupun, to go in and out of the prison. They go into the prison in the morning, go out for dinner, back again after dinner and out again in the evening. These one hundred civilians, free men, are scattered among some three hundred convicts, so that Wells & Co. can use the convict labor to advantage. No system your commissioners have seen, is more lax than the one in Wisconsin. With human nature as it exists, the prisoners are constantly posted as to what is going on outside the walls. Prisoners are a sharp lot of men, many of whom before their incarceration made their living by their wits alone, and there are but few guards able to prevent them from communicating with the civilians.

The state furnishes buildings, nicely warmed, well lighted, with all the power to run the machinery, for about one hundred civilians employed by M. D. Wells & Co. The citizens of Wisconsin appearing before your commission claimed that it was unjust to free labor; that the first duty of the state was to protect the army of artisans outside the walls of a prison.

We give below a copy of the contract between the State of Wisconsin and Wells & Co. of Chicago:

CONTRACT.

THIS AGREEMENT, Made and concluded this sixth day of July, A. D. 1882, by and between Geo. W. Carter, as warden of the Wisconsin state prison, for the state of Wisconsin, party of the first part, and M. D. Wells and Co., of Chicago, in the state of Illinois, parties of the second part, witnesseth, that the said party of the first part, for the said state, and for himself as such warden, and his successors in office, in consideration of the rents, covenants and agreements hereinafter set forth, mentioned, reserved and contained to be paid, kept and performed by and on behalf of the parties of the second part, their successors, heirs, executors, administrators and assigns, does hereby covenant, promise and agree, for the said state, and for himself as such warden, and his successors in office, as follows:

First.—To furnish to the said parties of the second part, for the term of five years, beginning on the first day of January, A. D. 1883, and terminating on the thirty-first day of December, A. D. 1887, the labor and services of all the able-bodied convicts, which may or shall be confined in said Wisconsin state prison during said term, or any part thereof (excepting and reserving therefrom such and so many of said convicts as may, in the judgment of said warden, his successor or successors in office, or the officer acting as such, from time to time be required for carrying on the ordinary business of said prison), not exceeding in all, at any one time, three hundred convicts, to be employed only in the manufacture of boots and shoes and other work incidental thereto. For the purposes of this agreement, the words "able-bodied convicts" shall be held and construed to include all convicts, except those who, by reason of physical disability or other infirmity, are incapacitated to perform an ordinary day's labor.

Second.—To furnish so much of the shop room now built within the walls of the said prison as may be required for the successful employment of said convicts, and in addition thereto such room for storage as may be required and can conveniently be spared by the party of the first part for that

purpose, also such power as may be necessary for carrying on said manufacturing and such shafting, pulleys and machines now on hand as can be legitimately used in said business; to warm all workshops, and in addition furnish not to exceed one runner or choreman for every fifty convicts employed.

Third.—To maintain the discipline of the said convicts in as good condition as it now exists, and to furnish a sufficient number of guards and keepers to maintain industry, good order and discipline among the convicts.

And the said parties of the second part, for themselves, their successors, their survivor or survivors, and their and each of their heirs, executors and administrators, in consideration thereof, do hereby covenant, promise and agree to and with the said party of the first part and his successors in office, as follows:

First.—To pay in full, on or before the tenth (10th) day of each and every month during the existence of this agreement, at the rate of fifty cents per day per convict for each and every day's labor performed by them during the month next preceding, ten hours of labor to be accounted as a full day, and the number of hours to be spent in labor to be regulated exclusively by the warden for the time being, or in his absence by the deputy warden, or other officer acting as such.

Second.—To furnish, at their own expense, all foremen and instructors, material and machinery, except as herein otherwise provided, in such number and quantity and in such time as may be required to keep said convicts fully and constantly employed.

And it is hereby mutually agreed and understood, by and between the parties hereto, as follows:

First.—That no deduction shall be made (by the said party of the first part) for the time lost by said convicts by reason of the failure or neglect of the parties of the second part to keep and perform any of the stipulations herein contained by them to be kept or performed, or while changing clothing, bathing, shaving or receiving visits from friends, in accordance with the rules and regulations of said prison now in force, or which may hereafter be adopted.

Second.—That nothing in this agreement shall be considered or construed as granting any right or authority to the said parties of the second part to govern or discipline the said convicts or any of them, but the said convicts shall labor under this agreement subject to all the rules and regulations of said prison, which may be in force from time to time for their government, discipline and care; and there is hereby reserved to the state board of supervision, and to the warden and each and every of his subordinate officers and employes, full power and authority to prevent the demanding or imposition of unusual or severe labor, or labor whereby the health or safety of the convicts may be impaired or jeopardized, and the said warden may from time to time prescribe all needful rules for the government of the said parties of the second part, their overseers and agents,

in their relations to the convicts, and may require the summary dismissal of any individual employed by the said parties of the second part, whenever in his judgment the presence or conduct of such individual is prejudicial to the discipline of the prison or the welfare of the convicts.

Third.— In case the number of able-bodied convicts in said prison, as herein defined, shall exceed three hundred, the parties of the second part may, at their election, have and receive the labor of such excess, at the same rate of pay, and upon the same terms and conditions as hereinbefore provided, for the three hundred or less under this contract, but in case they shall elect not to have and receive their labor, and in case any convict shall not be able-bodied according to the definition of those words as given herein, and the labor of such cannot be profitably used by the party of the first part, in carrying on the ordinary business of said prison, then and in either case the said party of the first part may employ or lease the same as the best interests of said prison may require.

Fourth.— Neither the said party of the first part, nor the state of Wisconsin, shall in anywise be held responsible or liable for any loss or damage by fire or other casualty to the business of the said parties of the second part, or to their property used or stored upon the grounds, or in the buildings of the said prison, but in case the buildings occupied by the said parties of the second part shall be destroyed, either in whole or in part, by fire or otherwise, without fault or neglect of the parties of the second part, their agents or employes, then the party of the first part shall rebuild the same, or furnish others of like capacity at the earliest practicable day; provided, however, that during the time of rebuilding or repairing any such shop, the parties of the second part shall be required to pay for the labor of such convicts only as they can keep profitably employed.

Fifth.— The parties of the second part hereby agree to keep all shops, buildings and machinery, occupied or used by them, under and by virtue of this agreement, in as good order, repair and condition as the same are now in, ordinary wear and tear, and damage by accidental fire or other casualties not happening through the fault or neglect of the parties of the second part, their agents and employes, only excepted.

Sixth.— That if the parties of the second part shall fail to pay any installment of the contract price for the period of thirty days after it becomes due, the said party of the first part may, at any time thereafter, and before the same is paid, declare this agreement forfeited, and thereupon the same shall become from that time forth inoperative; but the parties of the second part shall not thereby be released from liability to pay what may be due according to the terms thereof, nor shall the bond or bonds given by them be in any way affected.

Seventh.— That the said parties of the second part shall have no power or authority to assign, farm out or underlet their interest in this contract, in whole or in part, without the consent of the party of the first part, in writing, approved by the state board of supervision.

Eighth.—This agreement is made and entered into under, by virtue of, and pursuant to, the provisions of chapter 201 of the revised statutes of Wisconsin for the year 1878, and the same are hereby made a part hereof.

Ninth.—It is also mutually agreed, that whenever for any reason or reasons other than those in this agreement mentioned, any of the said convicts are absent from work or idle in the factory, then in such cases the said party of the second part shall be required to pay for only that number of quarter-days' labor to which the service actually rendered during any one day by said absent or idle convict, or convicts, nearest approaches.

IN WITNESS WHEREOF, The said parties of the first and second part have hereunto set their hands the day and year first above written.

(Signed) GEO. W. CARTER,

Signed in presence of

Warden of Wisconsin State Prison.

(Signed) JACOB FUSS.

(Signed) M. D. WELLS & Co.

(Signed) L. H. PARKER.

The state board of supervision of Wisconsin charitable, reformatory and penal institutions do hereby consent to, and approve of the foregoing contract.

Dated this seventh day of July, 1882.

(Signed) GEO. W. BURCHARD,

(Signed) LEVI A. PROCTOR,

(Signed) C. D. PARKER,

(Signed) JAMES BENTLIFF,

(Signed) C. LULING,

State Board of Supervision.

The within contract is hereby continued in full force and effect upon the same terms and conditions, except as hereinafter modified, for a term of five years from and including January 1st, 1898, viz., that the words contained in the original contract (printed form), "and in addition furnish not to exceed one runner or choreman for every fifty convicts employed," be stricken out and omitted.

The parties of the second part hereby agree and promise that at no time except by consent of the state board of control will they employ in said prison free artisans, shoemakers, cutters and laborers exceeding in all of such classes ninety-five employes.

It is hereby provided that at the option of either party this agreement and the within contract may be annulled, and shall cease and determine upon not less than six months' notice in writing.

IN WITNESS WHEREOF, the within named parties have hereunto set their names.

Witnessed by:

JACOB FUSS.

THOMAS B. ACKERS.

JOHN J. ROBERTS, *Warden.*

M. D. WELLS & Co.

The state board of control of Wisconsin charitable, reformatory and penal institutions do hereby consent to, and approve of, the foregoing agreement.

JAMES E. HEG.

CLARANCE SNYDER.

E. R. PETHRICK.

WM. P. LYON.

RICHARD GUENTHER.

In consideration of the continuance of the prison labor contract at Waupun, duly executed and signed, and for the further consideration of free lighting furnished and to be furnished us for the period of five years from and after July 1st, 1897, we hereby release the state of Wisconsin from liability on any claim we may heretofore have had on account of electric light machinery installed and operated by us in the prison shops.

M. D. WELLS & Co.

Waupun, Wis., August 27th, 1897.

The knitting department of the Waupun prison employs at the present time about fifty men, It is operated under an old contract which is exceedingly unprofitable to the state, the men earning for the state about twenty-seven cents per capita each working day.

About forty men are employed in the tailor shop of the prison, making and mending clothes for the convicts, and in contract work making overalls for Landauer & Co., Milwaukee. They earn about fifty-seven cents per day for the state.

The balance of the well men are employed in prison duties. The entire convict population of the prison at the time of writing is about six hundred.

The Milwaukee house of correction seemed to be the particular target for the chair manufacturers of Wisconsin, during the discussions at the session of the commission.

It would appear that Milwaukee county runs a prison of its own; that outside of Milwaukee county prisoners for similar offenses are sent to Waupun; that prisoners for a term of three years or under from Milwaukee county may be sent to the House of Correction; that United States prisoners are sent to the same institution.

The complaint is that those having long sentences are

put on the important parts of chair making, and by utilizing the short termers (fifteen days to three months) on the less important parts of chair-making, they are enabled to employ the entire labor in the manufacture of chairs.

Your commission visited the Milwaukee house of correction, was kindly received by Superintendent Heiden, and all information desired was most cheerfully given. The buildings are old, with wretched sewerage, and are badly ventilated. The shops are fairly well equipped with machinery, and turn out about about \$50,000 worth of chairs annually.

The bulk of the chairs are of common grade. The manufacturers complained bitterly of this competition, not so much of the output as of the way the product was sold, claiming the price was set for a similar class of goods, and that the house of correction had ruined the trade of the manufacturers of Wisconsin on certain grades of chairs.

Your committee thinks that too much latitude is given the sales agent by the house of correction authorities, in fixing the prices of the output, in competition with the great chair industry of the state.

We give below a copy of the contract:

CONTRACT.

THIS AGREEMENT, Made and entered into this 21st day of March, A. D. 1896, by and between Frederick Heiden, Jr., Inspector of the Milwaukee House of Correction, at Milwaukee, Wisconsin, on behalf of, and authorized to act for, Milwaukee county, hereinafter designated party of the first part, and Arthur D. Martin of Chicago, Illinois, hereinafter designated party of the second part; WITNESSETH:

That said party of the first part, being engaged in the manufacture of chairs at the house of correction in Milwaukee, and being desirous of marketing same, hereby covenants and agrees with the said party of the second part as follows:

That said party of the first part shall properly make and manufacture chairs of such designs and patterns and construction as party of the second part shall designate, and he shall produce these goods in first class marketing condition, equaling in all respects the chairs of a similar character made by standard manufacturers.

Said party of the first part agrees to furnish the entire output per day, as designated by party of the second part, and further agrees to ship these chairs upon orders booked by, or through, the party of the second part, to parties of approved credit, at such discount as the party of the second part allows the purchaser, it being understood and agreed that the credit of the party to whom the goods are sold shall be judged and passed upon solely by party of the first part, and that all orders are subject to the approval of the party of the first part; but it is agreed that party of the first part shall give reasonable time of credit to purchasers of goods, and in all ways assist and in no way hamper the party of the second part in procuring orders and establishing the sale of chairs.

It is further agreed that the party of the first part shall allow the party of the second part a commission of ten (10) per cent. on the net amount of orders booked for chairs that list at \$5.00 per dozen or under; and a commission of twenty per cent. on the net amount of orders booked for chairs that list over \$5.00 per dozen, and that the discount from list price allowed the customer shall not exceed twenty-five per cent. with reasonable freight allowances, unless specially arranged and consented to by party of the first part.

It is further agreed that all sales, whether made by party of the second part in person, or not, shall be credited as being sold through him, and that all settlements for commissions shall be made on the 15th day of the month for goods shipped the preceding month.

In consideration of the foregoing agreements made by said party of the first part the said party of the second part agrees to dispose of and sell the production of chairs as before said, of such patterns and styles that he shall designate, and under the conditions heretofore designated, provided the goods are made satisfactorily in material, construction and finish.

This agreement shall be in full force and effect from the 21st day of March, 1896, to the 21st day of March, 1897, with the understanding hereby agreed to that in case the arrangement is satisfactory to the party of the first part a contract shall be made at the option of the party of the second part for the period of five years from the 21st day of March, 1897, under the same precise conditions.

It is further mutually understood and agreed that a good and sufficient bond, approved by the party of the second part in the sum of ten thousand (\$10,000.00) dollars, shall be given by the said party of the second part.

In witness whereof the parties hereto have hereunto affixed their hands and seals the day and year first above written

FRED G. ISENING,
Chairman of County Board.

AUG. F. ZENTNER,
County Clerk.

FRED HEIDEN, JR., [Seal.]
Inspector.

A. D. MARTIN, [Seal.]

STATE OF WISCONSIN, }
Milwaukee county, } ss.

I, Aug. F. Zenter, County clerk, Milwaukee county, do hereby certify that the foregoing is a true and correct copy of an agreement entered into by and between Frederick Heiden, Jr., inspector of the house of correction, Milwaukee, Wis., and Arthur D. Martin of Chicago, Illinois, and now on file in this office.

AUG. F. ZENTNER,
County Clerk,
Milwaukee county, Wisconsin.

Your commission feel that they would be doing an injustice to your honorable body, to the people of the state at large, and to the unfortunate convicts, did they not speak of the poor physical condition of the Waupun prison, and the utter lack of reformatory measures. The prison is a very old one. The buildings, with few exceptions, are in poor shape. The bath facilities are wretched. The cells are as narrow and small as in any prison in the United States, if not smaller, being forty inches in width, with none of the modern plumbing arrangements for the convenience of the prisoner, such as are now used in advanced and civilized communities, and such as your new reformatory at Green Bay possesses; yet, these prisoners, sleeping in such quarters, under the filthy bucket system, breathing an atmosphere that must be polluted, are expected to be on hand, fresh and in good condition for ten hours' hard work every working day for the contractor.

Your commission believes in making the prisoner work, but also believes that a man's body should be kept in a good healthy condition by furnishing air free from contamination. They also believe that to improve a man's character he must have some mental change from the ordinary daily grind so that his mind, if susceptible of improvement, may be moulded in the proper direction. Justice should be tempered with mercy towards those who show a desire for improvement.

The cells in the eastern penitentiary at Philadelphia which the commission visited, are between seven and eight

feet in width, with the finest light and ventilation. In most prisons the cells are five feet or over in width.

In the Waupun prison, at the time of writing, there are more prisoners than cell accommodations, compelling the putting of two men in one forty-inch cell. The law requires that but one man shall occupy a cell.

This evil will be corrected when the Green Bay reformatory will admit of more prisoners being received there.

The diet of the prisoners seems to be ample, varied and wholesome.

It strikes your commission that much effort should be made to better the convict mentally and morally. It is true with ten hours' hard labor he is not in a very receptive condition. We think that with eight hours' work, at least two hours of the day could be devoted to building up of the character and intelligence of the prisoner.

The state prison has a physician, high in his profession, and a gentleman of ability, who could profitably deliver lectures to an assembly of the prisoners on subjects helpful to them.

It is true the chaplain employed, preaches every Sunday, but a portion of his time could be profitably employed in lectures on topics interesting to the unfortunates. In fact, there are many citizens of Wisconsin, able lecturers, who would be glad to address the prisoners for their betterment and pleasure.

But as long as the state expects the prison to be run for revenue only, but little attention can be paid to the building up of character. Perhaps some of the prisoners are not worth the effort, but certainly many are. Experience in other states has demonstrated this fact,

The system of congregating convicts in a vast workshop, regardless of the crime committed, regardless of age, regardless of everything but dollars and cents, is not reformatory in its tendencies.

While our state is not to the front in her prison work, she is starting on reformatory work in building an institution that should produce excellent results.

Your commission has visited the best reformatories in the country, and if the new reformatory at Green Bay is fashioned after Concord, Mass., no mistake will be made. The work at Concord for half the day is productive and of value, the other half is instructive, and under the management of its able superintendent, has reclaimed a very large percentage of those committed and all done in a humane, intelligent and scientific way. It is an institution of which Massachusetts may well be proud.

The great institution at Elmira is also regarded as an ideal reformatory. There instruction in trades is given in addition to excellent schooling, regardless of income to the state in the shape of profitable labor.

There are in the state of Wisconsin, thousands upon thousands of acres of excellent land from which timber has been cut. These acres are now awaiting the hardy settler to put his brain and muscle into the work of clearing a forty or an eighty acres as the case may be, so that by hard work, which he recognizes is incidental to ordinary prosperity, he may establish not only a home for himself but for the family to follow him.

Thousands of acres all over the state were years ago in the same condition as the wretched looking tracts of cut over land greeting the eye on a drive through the northern counties. The land can be acquired for a low price by the state of Wisconsin, can be converted into as fine farms as there are in the state; can be sold quickly when cleared ready for farming at a good profit.

There are enough good acres in large tracts to utilize a part of the labor of the convicts for many years to come, in an occupation healthful, useful and profitable.

The state, with the aid of convict labor, could erect the quarters necessary for the purpose, could possess a model farm of magnitude, all without the ultimate cost of a single dollar. The state would enhance the value of every acre in the section in which it operated.

The convicts could build the necessary prisons, make the brick, quarry or break the stone and lay them and thus

furnish their own quarters, the same as is done in other states.

At such times as the convicts could not clear and plow ground, they could be breaking and preparing material for good roads around the farms.

Such material exists all through the northern counties, ledges of stone, besides all the hard heads and boulders necessary for the building of first-class roads. The state could thus set the pace and example of good road building.

The state of Wisconsin has the opportunity when the time is ripe for it, to do away to some extent with the question of convict competition. They have acres enough to reclaim at a profit, thus adding to the value of the commonwealth.

Should the time come when the state could not find employment for the entire prison population on products for her state, county and municipal institutions, then the commissioners suggest the experiment of clearing up the cut over lands of the state. The question would require careful consideration before a departure of this character was made.

THE CONCLUSIONS OF YOUR COMMISSION ARE AS FOLLOWS:

1st. That prisoners cannot be kept idle.

2d. That the state account plan of manufacturing for the open market is objectionable to the free wage earner and manufacturer.

3d. That the contract system, the leasing of the convicts for a stipulated price per day, is contrary to the advanced spirit of the times and is objectionable. The state should enjoy the profit of the labor of the convict.

4th. That manufacturing for the state institutions and semi-state institutions as adopted by New York, is the fairest and best plan yet evolved, and should be adopted by the state of Wisconsin. This plan does not concentrate the convict labor on one or two industries, as under our

present system, nor are the tax payers paying a premium for the privilege of leasing the convict labor to contractors.

4th. That the state of Wisconsin should stop at once and forever the leasing of its convict labor. It is a system beneath the dignity of the commonwealth; absolutely unjust in principle and adverse to the interests of the vast army of wage earners and manufacturers. That the actual net amount realized by the state from its lease of convict labor is comparatively so small that the legislature can not afford to invite the condemnation of all classes of the citizens of Wisconsin, by keeping in force a system so obnoxious to the general public, and a system that should have years ago been relegated to an unenlightened past.

That the convicts should be a community by themselves. That their prison life should not be disturbed by the daily influx of a hundred or more free citizens as now exists, and which is against proper prison discipline.

That the board in charge of prison affairs, with the prison warden, should provide work for the convict and introduce such reformatory measures as are advisable and in accordance with the humane spirit of the age.

The commission believes that the legislature would be almost unanimously upheld by public opinion, regardless of party affiliations, in

(a) Appropriating a sum sufficient to rebuild the cell rooms at Waupun and in making the prison sanitary in its appointments.

(b) In appropriating a sum sufficient to set in operation the system of manufacturing products for the use of the institutions of the state, counties and municipalities, under a law properly drafted for that purpose.

6th. That the convicts from Milwaukee county should be sent to the state prison for the same class of offences for which they are now sent to Waupun from the other counties of the state, and not to the Milwaukee house of correction.

7th. That all United States prisoners received by Wis-

consin should be sent to the state prison and not to the Milwaukee house of correction. That those now at the house of correction who properly belong at Waupun, should be transferred to that prison.

8th. That the industry at the house of correction should be regulated by the state.

9th. That prisoners in excess of the accommodations at Waupun, should be remanded to the jails of their respective counties until there is room to receive them, thus preventing the putting of two men in one cell or having them sleep in corridors.

The supplies for the state institutions are bought, as far as possible, from the merchants and tax-payers of the state of Wisconsin.

The board of control has perfected a plan for buying supplies for the many institutions under their control in a wholesale way, so as to save money for the state over the old plan.

EXPENSES OF WAUPUN PRISON.

The principal items of expense of running Waupun prison for the year ending September 30th, 1898, were as follows:

Salaries and wages	\$29,421 38
Clothing.....	9,162 19
Food	\$33,057 51
Tabacco.....	1,116 33
	<hr/>
	34,173 84
Clothing, transportation, earnings, etc., discharged convicts.	4,873 31
Repairs and renewals.....	9,920 91
Power, heat and light.....	12,171 96
Laundry	950 59
Furniture.....	1,190 72
Insurance.....	2,612 50
Indebtedness paid off.....	782 46
Salaries and expenses, State Board of Control.....	2,415 55
Medical department	867 38
Miscellaneous	1,737 36
	<hr/>
	\$110,280 15

Receipts.

Receipts for convict labor.....	\$54,274 28	
Receipts from United States.....	2,186 35	
All other receipts.....	3,419 62	
Gain from tailor shop	8,238 92	
Gain from knitting shop.....	2,348 19	
		<u>70,467 36</u>
Deficiency or cost to the state	\$39,812 79	

No complaint has reached the commission in reference to the purchase of supplies.

Your commission cannot close its report without acknowledging the many kindness extended to them during their investigations. The prison wardens as a rule are an able, conscientious, humane set of gentlemen, ever studying to advance the welfare of the inmates of their respective prisons. We have had full opportunity to investigate carefully the workings of every prison or reformatory we have visited.

The state board of control has been exceedingly courteous to us, and Warden Roberts has been ever ready to render any help in his power for the investigation of the workings of his institution.

Very respectfully submitted,

DAVID C. GREEN,

B. A. BUFFINGTON,

JOHN L. STURTEVANT,

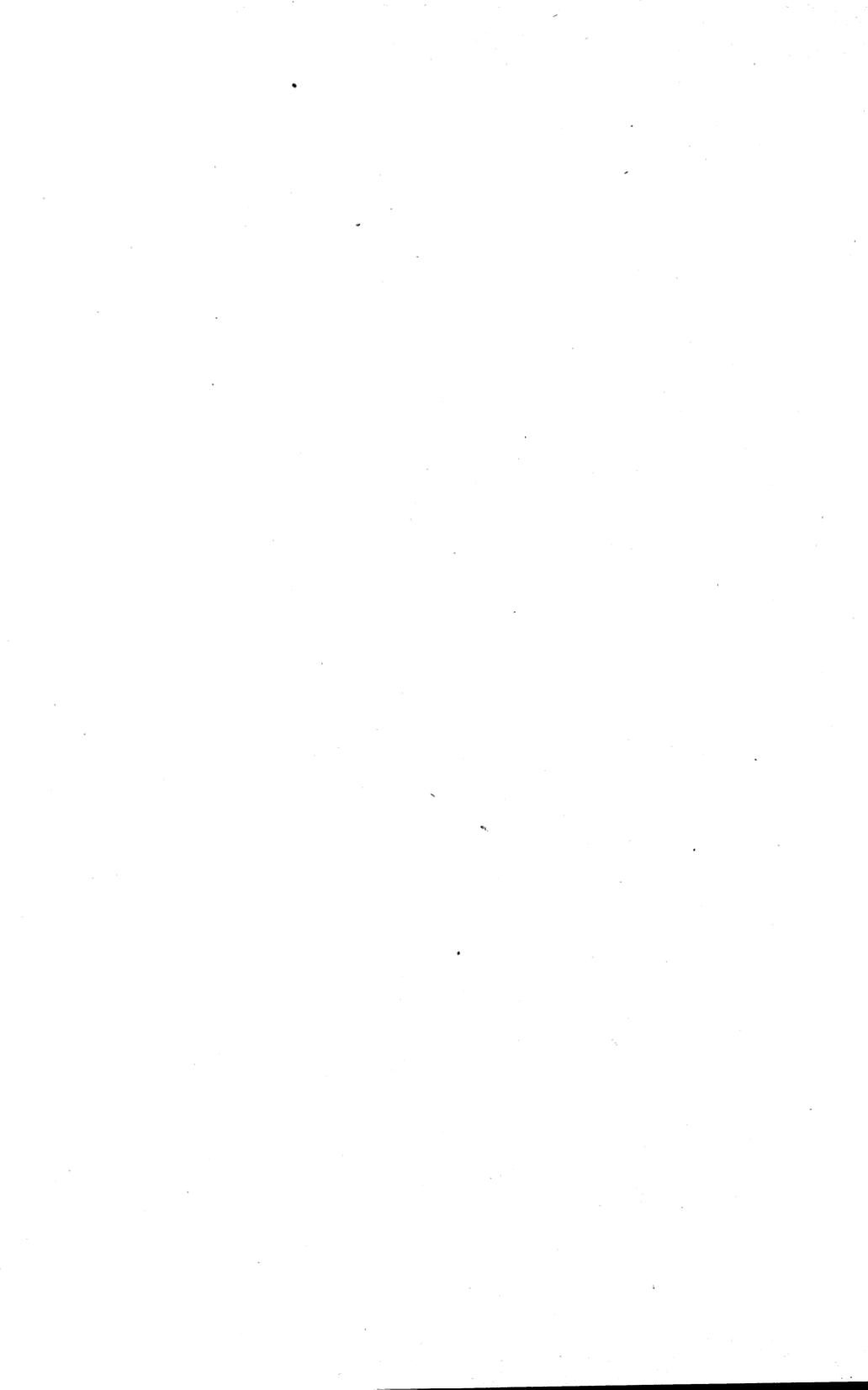
Commissioners.

Dated Jan. 3, 1899.









ANNUAL STATE CONFERENCE

OF

Charities and Corrections

HELD AT

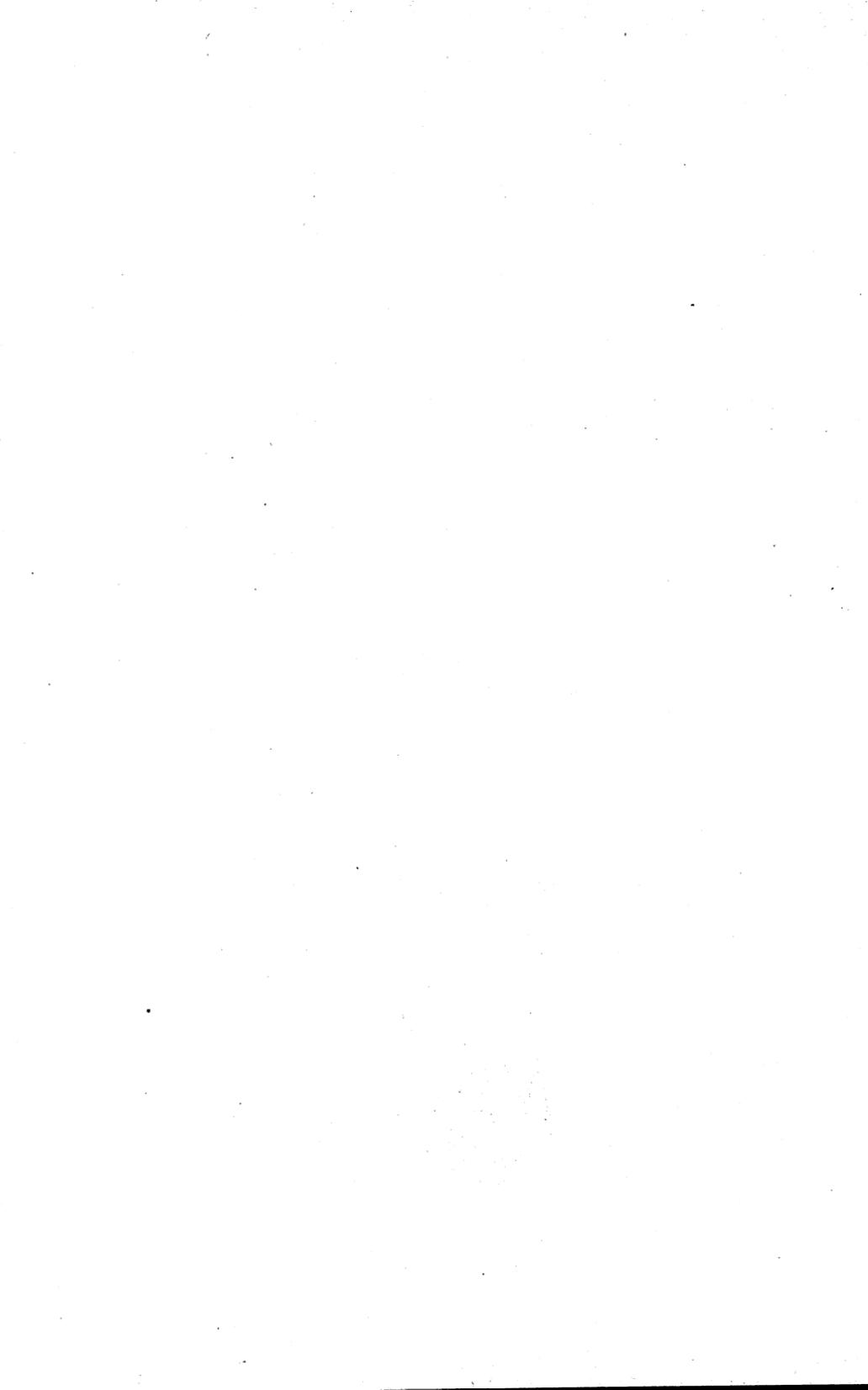
Madison, Wis., February 2-4, 1897

UNDER THE AUSPICES OF THE

**Wisconsin State Board of Control of Charitable, Reformatory
and Penal Institutions.**



MADISON, WISCONSIN
DEMOCRAT PRINTING CO., STATE PRINTER.
1898.



OFFICERS, 1897.

PRESIDENT—

W. H. GRAEBNER, 456—5th Ave., Milwaukee.

1ST VICE PRESIDENT—

J. H. STOUT, Menomonie.

2ND VICE PRESIDENT—

Mrs. WM. PITT LYNDE, Milwaukee.

SECRETARY—

LYNN S. PEASE, Wauwatosa.

EXECUTIVE COMMITTEE.

W. W. REED, Jefferson.	FREDERICK WILKINS, Viroqua.
J. G. J. CAMPBELL, Milwaukee.	ALBERT SALISBURY, Whitewater.
PETER DOYLE, Milwaukee.	JOHN M. WHITEHEAD, Janesville.
Mrs. WILLARD S. MERRILL, Milwaukee.	

STANDING COMMITTEES.

Reformatories and Penitentiaries.

PROF. J. J. BLAISDELL, Beloit,	W. D. HOARD, Fort Atkinson.
<i>Chairman.</i>	F. W. LAMB, Esq., Madison.
JUDGE J. R. BENNETT, Janesville.	C. H. BAXTER, Lancaster.

Commitment, Detention, and Care of Insane.

SUPT. FREDERICK WILKINS,	DR. W. F. WEGGE, Oshkosh.
Viroqua, <i>Chairman.</i>	DR. J. L. CLEARY, Kenosha.
DR. W. W. REED, Jefferson.	SUPT. L. P. EDWIN,
DR. W. A. GORDON,	Dane County Asylum, Verona.
Northern Hospital for Insane.	JUDGE J. C. LUDWIG, Milwaukee.
WALTER POLLOCK, Milwaukee.	

Custody and Training of Feeble Minded.

PRES. JAMES E. HEG,	Miss ELIZABETH WHITEHEAD,
Lake Geneva, <i>Chairman.</i>	Mendota.
PRES. ALBERT SALISBURY, Whitewater.	

Child Saving Work.

MRS. W. F. ALLEN, Madison, <i>Chairman.</i>	F. G. KRAEGE, Waukesha.
MRS. W. H. UPHAM, Marshfield.	WM. P. LYON, Madison.
Miss SARAH E. PIERCE, Milwaukee.	SUPT. W. F. KLUG, Milwaukee.

Associated Charities and Charity Organizations.

MRS. MARY F. CROSBY, Janesville,	GUSTAVE FRELLSON, Milwaukee.
<i>Chairman.</i>	THOMAS W. BUELL, Milwaukee.
MRS. FRANK W. HOYT, Madison.	CHARLES H. LEE, Racine.
MRS. C. D. CLEVELAND, Oshkosh.	WILLIAM W. JONES, La Crosse.

COMMITTEES.

Law and Legislation.

GEORGE H. NOYES, Esq., Burr W. Jones, Esq., Madison.
 Milwaukee, *Chairman.* WM. A. JACKSON, Esq., Janesville.
 LYNN S. PEASE, Esq., Milwaukee.

Education of Deaf and Blind.

Mrs. J. W. STEARNS, Madison, Supt. J. W. SWILER, Delavan.
Chairman. R. C. SPENCER, Milwaukee.
 RICHARD GUENTHER, Oshkosh. Supt. H. F. BLISS, Janesville.
 Supt. J. Q. EMERY, Madison. Miss LIZZIE J. CURTIS, Janesville.

LOCAL COMMITTEE.

FRANK HINRICHS, *Chairman.*

Reception.

Mrs. J. W. STEARNS. Miss MARY A. SABIN.
 Mayor and Mrs. A. A. DYE. Miss MARY E. YOUNG.
 Mrs. GEORGE RAYMER. Miss MOLLIE J. FOX.
 Mrs. W. F. ALLEN. Rev. P. B. KNOX.
 Miss MINNIE OAKLEY. Prof. R. B. DUDGEON.
 Miss IDA JOHNSON. Supt. L. P. EDWIN.

Meeting Place.

FRANK HINRICHS. JULIUS ZEHNTER. M. S. DUDGEON.

Finance.

JULIUS ZEHNTER. Prof. E. D. JONES. Mrs. F. W. HOYT.

Music.

Prof. H. D. SLEEPER. Rev. P. B. KNOX. Mrs. J. W. HOBBINS.

Press, Printing and Badges.

O. D. BRANDENBURG. AMOS P. WILDER. CARL GEBHARDT.

STATE CONFERENCE

OF

CHARITIES AND CORRECTIONS,

Held at Madison, February 2-4, 1897.

TUESDAY.

The conference was opened Tuesday evening at 8 o'clock by Pres. W. H. Graebner.

Addresses of welcome were made by Rev. P. B. Knox, Andrew E. Elmore and James E. Heg, president Board of Control.

Rev. Judson Titworth of Milwaukee then gave the Opening Conference Address: "The Responsibility of Society for Pauperism and Crime."

WEDNESDAY.

Forenoon Session.

The conference was opened by the address of the president of the conference—Hon. W. H. Graebner of Milwaukee.

Mrs. Mary F. Crosby, chairman of the committee on Associated Charities and Charity Organizations, presented the report of the committee on "Co-operation of Charity Organizations."*

A general discussion followed the presentation of the report. Hon. James E. Hegg, president of the State Board of Control,

presented the report of the committee on Control and Training of the Feeble Minded on "The Feeble Minded of Wisconsin."

Upon motion the president appointed Chas. H. Lee, James E. Heg, L. P. Edwin, Mrs. Mary F. Crosby and Supt. Miller a committee to nominate officers for the ensuing conference.

Frederick Wilkins, Andrew E. Elmore and Albert Salisbury were appointed a Committee on Resolutions.

Afternoon Session.

The report of the committee on the Commitment, Detention and Care of the Insane was presented by Supt. Frederick Wilkins, chairman.

Discussion.

Supt. C. S. McKown, La Crosse county asylum, presented a paper on "Are County Asylums for the Insane in Wisconsin Properly Equipped for the Due and Sufficient Care of Patients?"

Discussion.

Supt. A. J. Whiffen, Sheboygan county asylum, presented a paper on "The Employment of Patients in County Asylums for Insane in Summer and Winter."

Discussion.

Supt. William Andrus, Sauk county asylum, presented a paper on "The Treatment of Violent, Refractory, Destructive, and Filthy Patients in County Asylums."

Discussion.

Supt. E. D. Holden, superintendent of poor, Baraboo, presented a paper on "Hindrances to Proper and Efficient Management and Control of Poor Houses and Jails."

Discussion.

Dr. W. F. Becker, chairman of Joint Committee of State Medical and Milwaukee Bar Association, presented a paper on "The Medico-Legal Bearings of the Commitment of the Insane and the Proposed Amendments to the Law."

Discussion.

A resolution was presented and adopted that a medico-legal section be established in connection with the State Conference of Charities and Correction, such committee to consist of two

members from the State Bar Association, two members from the Milwaukee Bar Association, two members from the State Medical Society, two members from the Medical Society and two lay members, Dr. W. F. Becker of Milwaukee to be chairman.

The following committee was then appointed:

Dr. W. F. Becker, chairman, of Milwaukee.

Dr. Richard Dewey of Wauwatosa.

Dr. H. V. Ogden of Milwaukee.

Dr. J. T. Pritchard of Manitowoc.

Hon. J. C. Ludwig of Milwaukee.

Hon. Wm. P. Lyon of Madison.

Hon. Joshua Stark of Milwaukee.

Supt. Frederick Wilkins of Viroqua.

Walter Pollock of Milwaukee.

Evening Session.

The Conference address, "State Care of Dependent Children," was given by Prof. A. L. Graebner, Concordia college, St. Louis, Mo.

THURSDAY.

Morning Session.

Mrs. W. F. Allen, chairman of committee on Child Saving Work, presented a report on "A Few of the Vital Questions in Child Saving, with Suggestions from the Work of Other States."

Discussion.

Prof. E. D. Jones, of the University of Wisconsin, presented a paper on "Sympathy and Reason."

Discussion.

Afternoon Session.

The committee on Nominations of Officers for ensuing conference recommended the following nominations:

President, Wm. P. Lyon of Madison.

1st Vice Pres., Col. C. E. Warner of Windsor.

2d Vice Pres., Mrs. W. H. Upham of Marshfield.
 Secy., Lynn S. Pease of Milwaukee.

Members of Executive Committee:

W. H. Graebner, Milwaukee.

Frederick Wilkins, Viroqua.

Rev. P. B. Knox, Madison.

Mrs. W. S. Merrill, Milwaukee.

The Board of Control recommended:

L. P. Edwin, Verona.

Dr. W. A. Gordon, Oshkosh.

Clarence Snyder, Madison.

Upon motion the officers were elected as recommended.

On behalf of the committee on Reformatories and Penitentiaries, Supt. Frederick Wilkins presented a eulogy of the services of the late Prof. J. J. Blaisdell, who had been the chairman of the committee since the organization of the conference.

Upon motion Andrew E. Elmore and Rev. Dysart were appointed a committee to compile and present to the conference a record of Prof. Blaisdell's work.

Hon. H. H. Hart, secretary of National Conference of Charities and Correction, St. Paul, gave an address on "The Juvenile Delinquent."

Mrs. J. W. Stearns, chairman of committee on Education of the Deaf and the Blind, presented a report on "Some Relations Between the State and Its School for the Deaf and Blind."

Discussion.

Judge Wm. P. Lyon, Supt. J. W. Swiler, Supt. H. F. Bliss, R. C. Spencer and Mrs. J. W. Stearns were appointed a committee to formulate a plan to carry out the recommendations of the report.

Upon motion the officers of the conference were instructed to appoint delegates to the National Conference. The following delegates were appointed:

List of Delegates from the Wisconsin State Conference of Charities and Correction to the National Conference:

Mrs. Willard S. Merrill, Milwaukee, Wis.

Mrs. Henry Whitcomb, Milwaukee, Wis.

Judge Ludwig, Milwaukee Wis.
 W. H. Graebner, Milwaukee, Wis.
 R. C. Spencer, Milwaukee, Wis.
 Col. C. M. Butt, Viroqua, Wis.
 Supt. Frederick Wilkins, Viroqua, Wis.
 E. V. Wernick, Hillsboro, Wis.
 A. P. Wilder, Madison, Wis.
 Miss Lovila Mosher, Waukesha, Wis.
 Supt. J. W. Swiler, Delavan, Wis.
 Mrs. William F. Allen, Madison, Wis.
 Sen. J. M. Whitehead, Janesville, Wis.
 Prof. Scott, Madison, Wis.
 Prof. Jones, Dept. of Economics, Madison, Wis.
 Prof. R. T. Ely, Madison, Wis.
 Supt. Gordon, Winnebago, Wis.
 Supt. Lyman, Mendota, Wis.
 Supt. H. F. Bliss, Janesville, Wis.
 Supt. J. G. Hart, Waukesha, Wis.
 Supt. Wilmarth, Chippewa Falls, Wis.

The following resolution was reported by the committee on Resolutions for adoption:

Whereas, The movement towards the abolition of convict labor is daily growing in volume and intensity, and

Whereas, Vital and fundamental principles are involved affecting our political and social organism as well as humanity itself, therefore be it

Resolved, That the Committee on Penal and Charitable Institutions be and is hereby requested to thoroughly investigate and report upon this question at the next conference.

Also resolved, That it is the sense of this Conference that the subject is of so great and pressing importance to our commonwealth as to justify the governor and legislature in appointing a commission representing all interests involved before legislation in relation thereto is enacted.

A. Elmore,
 F. Wilkins,
 Prof. Salisbury.

Resolution was adopted.

A resolution of thanks was adopted, thanking the citizens of Madison, the officers of the Presbyterian church, and others who had so kindly assisted in the success of the Conference.

CIVIL SERVICE REFORM SESSION

At Assembly Chamber, Thursday Evening.

Rev. E. G. Updike delivered the conference address, "Civil Service Reform."

The following gentlemen delivered addresses: Hon. Joshua Stark, Milwaukee; Supt. Frederick Wilkins, Viroqua; Professor Charles N. Gregory, Madison.

A meeting was then held for the purpose of organizing a State Civil Service Reform League.

Hon. Joshua Stark was elected temporary chairman, Supt. Frederick Wilkins of Viroqua, temporary secretary.

A constitution was adopted as follows:

CONSTITUTION OF THE WISCONSIN CIVIL SERVICE REFORM LEAGUE.

Name.

The name of this Association shall be the Wisconsin Civil Service Reform League.

Purpose.

It shall be the purpose of this League to secure the application of the principles of Civil Service Reform to the administration of public affairs in the State of Wisconsin.

Officers.

There shall be a President, 1st and 2nd Vice President, Secretary and Treasurer, and an Executive Committee of five, who shall be elected at the annual meeting of this League, who shall perform the duties usual to such officers.

The annual membership fee shall be one dollar.

No moneys shall be expended except as appropriated by the League at its annual meeting or by the order of the Executive Committee.

The Executive Committee, together with the President and Secretary, who shall be members ex-officio of such Committee, shall be the governing board of the League, and shall have full power to administer the affairs of the League during the period between the meetings thereof.

The following officers were elected:

President, Charles N. Gregory, of Madison.

1st Vice President, E. G. Updike, Madison.

2nd Vice President, R. C. Spencer, Milwaukee.

Secretary, Lynn S. Pease, Milwaukee.

Treasurer, John Johnston, Milwaukee.

Executive Committee:

Charles N. Gregory, ex officio, Madison.

William P. Lyon, Madison.

John M. Olin, Madison.

F. G. Kraege, Waukesha.

W. H. Graebner, Milwaukee.

Frederick Wilkins, Viroqua.

Lynn S. Pease, ex officio, Milwaukee.

Meeting adjourned.

The following bill to establish Civil Service in Wisconsin was drafted by Secretary Lynn S. Pease, and presented in the senate by Senator Davis:

To Create and Establish the Civil Service of the State of Wisconsin. The people of the state of Wisconsin, represented in Senate and Assembly, do enact as follows:

Section 1. That the governor shall, with the advice and consent of the senate, appoint three persons to be Civil Service commissioners, one of whom shall be appointed to serve until the expiration of one year, one until the expiration of two years, and one until the expiration of three years, from the first day of July, in the year 1897; and in the year 1898, and in every year thereafter, the governor shall, on or before the first day of June, in like manner appoint one person to serve as such commissioner for

three years from the first day of July then next ensuing, and until his successor is appointed and qualified; and, in case of any vacancy in the office of commissioner, shall in like manner appoint a successor for the unexpired term of the commissioner whose place shall be vacant, as aforesaid.

All appointments, both original and to fill vacancies, shall be so made that not more than two commissioners shall, at the time of any appointment, be members of the same political party. The three commissioners so appointed will constitute the Civil Service commission of Wisconsin and shall qualify by filing with the secretary of the state an oath to faithfully perform the duties of their appointment, and shall be paid their traveling expenses actually incurred in the discharge of their official duties. Two commissioners shall constitute a quorum at any meeting thereof duly convened, and said commission may at all times act by a majority of its members.

Sec. 2. The said commissioners shall classify all the salaried offices and places of employment in the service of the state of Wisconsin, except such as are hereinafter specified or may be specified in accordance with the provisions of this section, and such officers and places of employment shall constitute the Classified Civil service.

This act shall not apply to:

Officers elected by the people and officers whose appointment is subject to confirmation by the senate;

Officers and employees of the State university and of the State Normal schools;

Officers and employees of the courts of the state;

The officers and all employees of the senate and assembly;

The private secretary, executive clerk and messenger of the governor;

And such other officers and employees as shall be designated by the governor and reported to said Civil Service commission within three months after this act shall become a law, but the governor may at any time place any officers or employees on the list of the Classified Civil Service, except such officers or employees as may be excepted by this act; and when the governor shall have notified the Civil Service commission of any such extension

of the Classified Civil Service such places shall be governed by the rules and regulations as herein provided for the Classified Civil service.

Said Civil Service commission, or a majority of them, shall prepare rules and regulations adapted to carry out the purpose of this act, and may amend, alter, add to or rescind the same; but all such rules so prepared and amendments, alterations, additions or rescissions of the same shall be subject to the approval of the governor, and shall not become operative until approved by him and published by the commission as hereinafter provided.

Sec. 3. Said Civil Service commission shall supervise the administration of the rules established by it, and on or before the first Monday of December in each year report to the governor its proceedings during the year preceding, including the rules then adopted and in force under the provisions of this act, with their suggestion of such legislation as may seem to them desirable for the efficient carrying out of the principles of this act, to be by him forwarded to the legislature at the next session thereof with his recommendations thereon.

Sec. 4. The rules and regulations to be adopted by said Civil Service commission shall, as nearly as the conditions of good administration will warrant, among other things, provide and declare as follows:

1. For open competitive examinations for testing the fitness of applicant for the public service.

Such examinations shall be practical in their character and relate to those matters which will fairly test the relative capacity and fitness of the persons examined to discharge the duties of the office or employment in respect to which such examination is had.

2. That all offices, places and employments under the provisions of this act shall be filled by the officer having power to appoint by selection from among the three persons graded highest as the result of such competitive examination; and, where practicable, vacancies shall be filled by promotion.

3. That promotions from the lower grades to the higher grades in the Classified Civil service shall be on the basis of merit and competition, and in appointments to all grades above the lowest due credit shall be given for good conduct and efficiency in

previous service, and preference (other qualifications being equal) shall be given to those applying for promotion over those applying for original appointment.

4. For holding non-competitive examinations in all proper cases, when competent persons do not compete after notice has been given of the existence of the vacancy under such rules as may be prescribed by the commissioners.

5. The examinations of applicants for employment as laborers shall be as to their capacity for labor, their habits as to industry and sobriety, and their experience in the kind of work for which they apply.

Any exception deemed needful or expedient from said five provisions last herein contained shall be set forth in connection with such rules, and the reasons therefor stated in the annual report of the said commission to the governor.

Sec. 5. All rules established as hereinbefore provided, and all additions to or alterations thereof, shall forthwith be printed for distribution by said commissioners, and said commission shall publish the same by sending a certified copy thereof to the governor, and notice of such publication and of the place where copies thereof can be obtained, shall be advertised in the official newspaper of the state, and in such advertisement the date at which such rules will go into operation shall be specified. Public notice of the time and place of every examination, together with the information as to the kind of place for which such examination is to be held, shall be given at least two weeks prior to such examination.

Sec. 6. After the expiration of three months from the first publication of the rules and regulations adopted by said Civil Service commission and approved by the governor, as aforesaid, no person shall be appointed or promoted to any position in the Classified Civil service of this state, the service of which has been classified as above mentioned, in any manner or by any means other than those prescribed by this act. To prevent the stoppage of public business, or to meet extraordinary exigencies, the head of any department of office may, with the approval of the commission, make temporary appointments to remain in force not exceeding sixty days, and only until regular appointments under the provisions of this act can be made,

Sec. 7. The said Civil Service commission shall appoint an examiner, who shall under their direction superintend examinations under this act, and perform such other duties as may be prescribed. Such examiner shall receive a salary at the rate of \$1,200 per year, and be paid his actual traveling expenses incurred in the discharge of his official duty. Said commission may also appoint a secretary at a salary not exceeding \$600 per year, and may also incur such expenses for printing, stationery and advertising, and such other incidental matters as may be approved by the governor and from time to time be authorized by law.

Sec. 8. Said commission shall be provided under the direction of the superintendent of public property with an office properly furnished in the capitol or other convenient building in Madison, suitable for the performance of the duties required by this act.

Sec. 9. The said commission shall keep records of all their proceedings, and of all examinations made by them or under their authority, and of all recommendations of applicants for office received by said commissioners, or any of them; and all recommendations of applicants for office in the classified service, made to said commissioners, or either of them, or to any officer having authority to make appointments to offices in the classified service, shall be kept and preserved, and all such records and recommendations, all written causes of removal, filed with said commission in accordance with the provisions of this act shall, subject to such reasonable regulations as may be made by the commissioners, be open to public inspection.

Sec. 10. Said Civil Service commission shall investigate the enforcement of this act and of its rules and regulations, and the action of the examiner herein provided for, and in the conduct of said investigation shall have power to summon witnesses and to administer oaths or affirmations to them and take their testimony in such cases, and such witnesses shall be entitled to receive the same fees for attendance and travel as shall be paid to witnesses before the Circuit court of the county in which such investigation is held, which shall be paid from the appropriation to said commission. Any witness, duly subpoenaed, who shall

refuse to be sworn or affirmed by it, or shall refuse to answer all legal questions duly propounded by it, shall be deemed guilty of a misdemeanor, and upon conviction thereof in the Circuit court of the county wherein such subpoena is served, if said witness refuses to attend, or in the county wherein such witness refuses to be sworn or affirmed to answer to such questions if he appears before the said commission, shall be punished by imprisonment in the county jail for a term not less than ten days nor more than one year, in the discretion of said court, and by such fine, of not more than \$500, as said court shall impose.

Sec. 11. Notice shall be given in writing to the said commissioners by the officer having the power of appointment of any vacancy in any office or employment under him, or to which he has the power to appoint, and which shall be within the classification made by said commission, and subject, in respect to the appointment thereto, to the rules and regulations prescribed thereby, and as soon as may be after the receipt of said notice said commission shall certify in writing to said appointing officer the names, addresses and grades of the candidates, not exceeding three in number for each vacancy, who shall have been graded highest at an examination held under the provisions of this act and the rules and regulations prepared by the commission in accordance therewith, and it shall then be the duty of said appointing officer to appoint one of the candidates whose names shall have been so certified. All appointing officers shall immediately report to said commission the name and residence of every person appointed, employed or promoted by him hereunder, and said appointing officers shall immediately report to said commission the name and residence of every person by him discharged or removed.

Sec. 12. In order to entitle any person to be examined for appointment or promotion under the provisions of this act, such person must state to the commission in his own writing and under oath his or her (1) full name, residence and postoffice address, (2) citizenship, (3) age, (4) place of birth, (5) health and physical capacity for public service, (6) previous appointment in the public service, (7) business or employment, and residence for the previous five years, (8) education, and (9) such other information

as may by said commission be reasonably required touching the applicant's fitness for the public service.

Sec. 13. No recommendation of any person who shall apply for office or employment under the provisions of this act, except as to the character and abilities of the applicant, shall be received or considered by any person making any appointment to any office or employment coming within the provisions hereof, and all solicitation of any of said commissioners or of their employees, or of the officer having the power of appointment, by any person whomsoever, in favor of any applicant is hereby prohibited.

Sec. 14. It shall be the duty of any person in the service of the state to aid and assist the commissioners in carrying out the provisions of this act, and no person in said service shall wilfully and corruptly by himself or in co-operation with one or more other persons defeat, deceive or obstruct any person in respect to his or her right of examination, or wilfully or corruptly falsely mark, grade, estimate or report on the examination or proper standing of any person examined hereunder, or wilfully or corruptly make false representations concerning the same, or concerning the person examined; or wilfully or corruptly furnish to any person any special or secret information for the purpose of improving or injuring the prospect or chance of any person so examined or to be examined of being appointed, employed or promoted.

Any person guilty of a violation of this section shall be deemed guilty of a misdemeanor, and upon conviction thereof in the Circuit court of the county wherein such violation occurred shall be punished by imprisonment in the county jail for a term not less than ten days nor more than one year, in the discretion of said court, and pay such fine, of not more than \$500, as said court shall impose.

Sec. 15. The commission shall certify to the auditing officer, and treasurer or other officer or agent of the state, by whom payments are made, the names of all persons duly appointed under the provisions of this act, and no auditing officer of the state shall approve the payment of any salary or wages to any person occupying any office in the Classified Civil service, appointed thereto after the rules adopted by said Civil Service commission

shall have gone into effect, and no treasurer or other officer or agent of the state shall wilfully pay any salary or wages to any person occupying any office in the Classified Civil service appointed thereto after said rules shall have gone into effect, unless such person shall have been appointed to said office in accordance with the provisions of this act.

Sec. 16. A sum sufficient to carry out the provisions of this act is hereby appropriated out of any money in the treasury not otherwise appropriated, provided that such sum shall not exceed \$2,500 annually.

Sec. 17. All laws or parts of laws inconsistent with this act are hereby repealed.

Sec. 18. This act shall take effect and be in force from and after its passage and publication.

REPORT OF COMMITTEE ON ASSOCIATED CHARITIES AND CHARITY ORGANIZATIONS.

“Co-operation of Charity Organizations,” Mrs. Mary Crosby, Janesville, Chairman.

Mr. President, Ladies and Gentlemen:

All charity organizations assume, in a measure, the material relief of the destitute and neglected, and become responsible for the moral elevation of the community to which they belong.

With our rapidly increasing population, the cry for help grows more urgent each year, and the question arises again and again, “How can we secure the greatest efficiency in caring for our poor with the least labor and expense, and so distribute the work as to prevent duplication?” In studying the different methods of dispensing charity in our own and other States, we find some of the old plans disappearing—newer and better ones

adopted, and there is hope that the great problem may in time be solved.

In the smaller towns of this state, the poor are cared for principally by the churches, local societies and the Overseer of the Poor—usually without any attempt at co-operative work. As the population is small, this may cover the ground sufficiently well, and the difficulties that arise be easily adjusted. A few of the larger towns have had for years Associated Charity Organizations doing most satisfactory work. And it is encouraging to note that others are coming to the front with improved methods.

Milwaukee cares for its poor through the Associated Charities, or Clearing House for its co-operative societies. Its work does not conflict with the county agent and the churches, but is independent of them. Its officers are efficient and agents untiring—plan of work thorough, with careful investigation and registration of all cases coming to its notice. Many years of practical experience have given strength of knowledge, and if there is any weak point in the system of work, it can be remedied by more extensive co-operation.

The "Racine Relief Association" works with the Superintendent of the Poor only. It reports that it has investigated and cared for every deserving case brought to its attention, and the total expenditure for the last year was only \$143. This, of course, does not include medicine, food or clothing donated.

The "Ladies' Benevolent Society", organized twenty-five years ago at Oshkosh, looks after the needs of the poor, protects friendless women and children, and provides shelter for the sick and homeless. The work is done mostly by ward visitors, is thorough, and takes in a large portion, if not all, of that city.

In 1886 the "Associated Charities" was organized in Janesville. Its original plan was to co-operate with all the churches, and local societies doing any charity work. It failed in this, however, through lack of interest and support, and has for years worked independently, except for the assistance of the Overseer of the Poor, who acts as its agent, with a small salary. This association is supported entirely by the "free will" offering of the people, and can give no entertainment for its own benefit. Be-

sides its President, Vice President, Secretary and Treasurer, there is in each ward a Vice President and a number of friendly visitors who meet once a week for conference. The work is done mostly by ladies who give it much time and thought. It affords temporary relief only, referring the permanently dependent to the county agent. No money is given to the applicant for aid, but the case receives personal investigation and immediate help is given, if needed. A complete record of each case is kept, which is at all times open to the public, and a yearly report is published. The report for the year ending December 8, 1896, shows an expenditure of \$302, not including clothing.

The "Associated Charities," recently started at La Crosse, are working on a similar plan, and have added a Labor Bureau and wood and stone pile for the unemployed.

All of these systems are good, and worthy of much praise, but each year the same difficulties arise, as, for instance, in Janesville, lack of means to carry on the work successfully, and more or less duplication of work. Then, too, year after year the burden falls on the same faithful workers or visitors who give more of their time and means than they can well afford.

Madison has recently inaugurated a scheme that may throw light on these perplexing questions. It is called "The Conference of Charities," and began by calling together representatives from the various benevolence dispensing societies—thirty-three in all—and gaining their consent to act in concert. As it is still in its infancy, time only can tell what it may develop, but the advantages of the plan recommend themselves to our attention.

A little more than a year ago, the "Charity Organization Society" of Buffalo, New York, asked the churches to join in an organized attack on human misery and vice in their city. Some one said, "If we could district the large cities, and induce the churches to look after them as the politicians look after the voters, there would follow such an uplifting of the masses as has not been known since the coming of the Master." Following this suggestion, a committee was set at work districting the city, with a view to placing each district in the care of a church

or society. In accepting a district, each church agrees to "feel a special responsibility for the moral elevation of the district, and for the removal of plague spots, and with the aid of the Charitable Institutions, to become responsible for the material relief of the destitute in its district." The church may act independently, if it chooses, or co-operate with the Overseer of the Poor, but when material relief is given, it is requested that the name and address of the family receiving it be sent to the Charity Organization Society, where a full record is kept. Up to October 5, 1896, seventy-five churches and societies had accepted districts, and in most of them active work is carried on. The economy and advantage of this plan is obvious. Desultory visiting of families scattered over all points of the compass is wasteful in time and knowledge. It is well to have a definite responsibility which we can see, instead of a general one everywhere, and one can often see wonderful results if work is confined to a fixed area. Difficulties will arise in this as in all other plans, but the work done will yield larger results, if concentrated.

The higher side of this method lies "In the development among those who take a district of such a spirit of loving friendliness and neighborliness as will make them seek to know, as well as to help, those who live within the neighborhood in their charge." Only those who work among the poor can fully appreciate the value of friendly visiting. A little thought and kindness are often worth more than money. "Not alms, but a friend" is often the cry of a suffering heart.

One reason why many of the homes of the very poor are so untidy and uninviting is because the parents through their poverty become discouraged. Cannot the homes be made brighter, and the children taught self-respect and independence?

If cleanliness were insisted on in our public schools, there would be more hope for the homes in future. In Copenhagen, baths have been introduced into the common school buildings and the children of the lower classes are obliged to bathe three times a week, while their clothing is thoroughly sterilized. The parents frequently complain that this compulsory cleanliness dissatisfies the children with their homes.

The growth and success of all Charity Organizations depend

largely on investigation, registration, and a monthly or yearly report of its work for the benefit of the public. It is a mistake to think it an unfriendly act to seek full information of one whom we wish to help. The knowledge thus gained is as likely to prove favorable as otherwise, and is even more necessary to thorough, friendly aid than to detection of fraud. Registration prevents imposition and duplication of work. It has also been truly said, "There is no form of organized benevolence which needs so often to justify to the community its real aims and methods as that which concerns itself with the relief of the destitute."

An employment bureau for the benefit of those seeking work is of great assistance. And a wood yard or stone pile, where men out of employment, temporarily, can receive fuel and groceries in exchange for work, is an important factor. We wish to help, not to pauperize, as constant bestowing is apt to do—and to relieve the feeling of helplessness and dependence which often makes a man degenerate into a beggar or a tramp. To help others to help themselves is true charity.

It is reported as a curious fact, and a suggestive one, that the number of women in the poorhouses in the state of New York is gradually decreasing, while the number of men steadily increases. It is attributed in a measure to the increased avenues open to women for profitable employment, and the larger use of tobacco and spirituous liquors by men. Cannot and will not the charity organizations insist on the enforcement of every law that will save men from the saloon?

"Mayor Pingree's potato patch" or garden plan has been tried in Omaha, Detroit, and other places, and met with great success. It is reported that Detroit saved \$25,000 in the last year by this method of caring for the poor. The Agricultural Commission and the County Commissioners assist the "Associated Charities" in this work.

There is a growing belief that not only is co-operation in charity work necessary to bring about "more harmonious relations and more intelligent work between the charitable societies and the people," but that consolidation of time, labor and means is in the interest of efficiency and economy. If a plan of work,

well systematized and carried out, is good for a large city like Buffalo, why may not the same system be modified to meet the demands of our smaller towns?

Charity work, like history, repeats itself, and the subject is too prolific to more than touch upon at this time, but, after careful study, this committee is convinced that great strength and success lies in extensive co-operation. Let the local charitable societies, civil authorities, county agent, lodges, and even private charity in our towns, act together understandingly, and the question of how to care for our destitute and discouraged may be in a great measure if not wholly, answered. We therefore recommend for your careful consideration and discussion the ways and means of speedily bringing about this desired result.

THE FEEBLE MINDED OF WISCONSIN.

By James E. Heg.

Since the last meeting of this Association, the Legislature appropriated \$100,000 for a Home for the Feeble-minded of Wisconsin. It pleases me to believe that this gracious act of the Legislature was due in a great measure to the influence upon it, of the discussion for the need of such an institution at the last meeting of this society, held in the fall of 1894. Certain it is that to the persistent efforts of a number of the members of this society is largely due the fact that Wisconsin at last is to have an institution so badly needed for the care of the class so sadly neglected during the past.

It is not necessary for me to give a history of the efforts that have been made during the past thirty years to have the state provide for these unfortunates and to lift in a measure the awful

burden of sorrow placed upon the family by the advent in it of an imbecile or idiot.

The insane, the blind and the deaf, for many years have enjoyed the fostering care and liberal favors provided for them by the state. Their claims upon the practical sympathy of the community have been munificently responded to and no one questions the duty of a prospering people to make the helpless the objects of their special care. But during all these years the public has ignored and neglected the idiot and the feeble-minded classes equally abject, equally deserving and in all respects equally entitled to our care and support. We confidently believe that the establishment now nearly ready for them, if carried to the hoped-for development, will be the means of giving consolation to as many homes and happiness to as many stricken hearts as any or all of our other magnificent state institutions of which the people of Wisconsin are so justly proud.

The Legislature placed upon the State Board of Control, the duty of finding a suitable location, of proceeding with the construction of the buildings, of making rules and regulations for the admittance of inmates.

Possibly no greater problem than this was ever before given to a public body in this state.

The decision as to the location was the easiest part of the work although the jealousies existing between the competing cities were so great that the decision of this question entered into state politics and made life a burden to the members of the Board. That feature of the law virtually compelling the Board to put up this institution to the highest bidder was a wrong principle for so prosperous and great a State as Wisconsin to adopt and it should never again be used in the location of its public institutions. The Board, however, took into consideration many other things than the amount of the bonuses offered and finally settled upon Silver Springs Park, a mile or two out of the beautiful city of Chippewa Falls. And right here allow me to state, positively and emphatically, that in the location of this institution, in the selection of its officers, in the contracts for the work, in every matter, in short, connected with this establishment, politics have cut no figure whatever with the Board

of Control, nor has any consideration had the slightest influence except the highest good of this beneficent charity.

The greatest difficulty was before the Board after the question of location was adopted. Visits were made by members of the Board to other institutions in the United States for the care and training of the feeble-minded, in order to adopt such plans for buildings and such rules and regulations for the admission and administration as might prove to be the best for all purposes. The difficulty arose from the fact that scarcely any two institutions in the country are organized upon the same lines or are working upon the same principles. Nearly all were originally started as schools, with the declared purpose of educating the imbecile so that he could be returned to society as a normal being. This was however found to be utterly impracticable in 95 or even a larger percentage of the cases admitted, which were of the better grades at that. When it was found that radical changes must be made in the original plans of the promoters of institutions for the feeble-minded and idiotic, the superintendents were obliged to adapt these changed conditions to fit the buildings already provided and to conform to the laws already made for the maintenance and care of these unfortunate classes. None of these early promoters were willing to confess that they had been entirely wrong and that fact also tended to keep the earlier institutions working along the same lines, though more or less modified.

At the present time, however, all those who have the care of the feeble-minded are agreed that but a very small percentage should ever be allowed to leave the institutions and that a commitment to an institution for imbeciles and idiots virtually means that such person is sent there to be cared for during life.

It will be seen that the buildings constructed under the idea that these institutions were to be great schools were not what we cared to adopt in Wisconsin. We had nothing to follow, as the buildings in no state were adapted for the purposes of a Home such as the Wisconsin law contemplated. The institution at Waverly, Massachusetts, came the nearest to our idea of what was needed and to some extent the plans adopted there were followed by the Board of Control. Or rather let me

say, the plans and ideas suggested by the efficient and enterprising superintendent of the Massachusetts institution, Dr. Fernald, impressed the Board and its architect as being more nearly what was needed than any institution visited.

It was decided to limit the final capacity of the Home to 1,000 persons. In addition to this will be the several farm colonies each of 30 or 40 boys with about 100 acres to care for.

190 acres of the most picturesque part of the land were set aside for park purposes and it has been laid out in a tasty manner by skilled landscape gardeners.

When the entire plant of the Home is completed there will be approximately the following buildings in this park:

- An Administration building,
- A dormitory for boys of first grade.
- A dormitory for girls of first grade.
- A dormitory for boys of second grade.
- A dormitory for girls of second grade.
- A dormitory for boys of third grade.
- A dormitory for girls of third grade.
- A dormitory for boys (epileptics).
- A dormitory for girls (epileptics).
- A custodial cottage for boys.
- A custodial cottage for girls.
- A gymnasium and assembly hall.
- A school building for boys.
- A school building for girls.
- A kitchen and general dining room for both classes.
- Hospital building, laundry, power-house, chapel and Armory.

All of these buildings have already been located on the park map to the best advantage, according to the contour of the land and the purpose for which each is to be used.

Across the public highway from the park, will be the barn, ice-house, one of the farm buildings, etc., etc.

Of the contemplated plant, one large custodial building and one dormitory have been completed, together with the power-house, laundry and ice-house. The capacity of the present

buildings is 250 and the cost has been \$400 per bed. As this includes the expensive sewer system, the fine electric light plant, the water supply system, all large enough for future uses, it will be seen that the cost of additional beds will not be much over \$300.00 each.

The water supply is from never failing springs, the analysis of whose waters shows it to be equal as a table water to the Bethesda spring water of Waukesha, but softer and therefore better for general purposes. The capacity of these springs is virtually unlimited. There is enough so that artificial lakes can easily be constructed within the park.

The plans contemplate that a system of irrigation will be adopted for the farms, and for this purpose there is the swift flowing Chippewa river along a mile and a quarter of the boundary of the farm.

The sewerage system has been arranged for the disposal of the sewage upon the land. In this day and generation, the public body that deliberately causes sewage to be emptied into a running or other body of water commits a crime against society that ought to be punished.

The preparation of rules for the commitment of inmates to this institution has been a most serious matter involving many hours of anxious study.

The Board of Control have decided to recommend to the Legislature the adoption of a law for the commitment of inmates to the Home, and in this connection allow me to call your attention to certain features of this act. Nearly all the institutions for the care of feeble-minded in the country are private or semi-private corporations. Commitments to such institutions are not forced. Admission is made by voluntary application on the part of a parent or guardian.

This act, however, compels the commitment of all who are a danger to the community, especially of the women of child-bearing age, who by virtue of the fact that they are incapable of protecting themselves easily fall into immorality. The possibilities of evil possessed by a feeble-minded woman of this class are simply astounding. She may be the beginning of a line of feeble-minded and insane descendants extending into unnum-

bered generations most of whom will to the very end be public burdens. In one county in this state, I have seen a feeble-minded woman who has borne seven sons, six of whom are now living. This family has cost that county over \$40,000 and the blessed end has not yet arrived.

Another feature, which we believe commendable, is the clause compelling the Superintendent to make pathological researches in the interest of science. The Superintendent engaged by the Board, Dr. A. W. Wilmarth, during his eight years' work at the Elwyn, Pa., institution has the reputation of having made the greatest number of pathological investigations of idiotic brains that has as yet been made by any one pathologist, but he testifies that the cases that would have undoubtedly proved of the most value to science and a more complete knowledge of this great subject were forbidden to the surgeon because the inmate was a private patient and the family would not permit a post-mortem.

It is the duty of society to protect itself first of all. No mere sentimental consideration that shall stand in the way of cutting off the source of supply of idiocy, insanity and the like, ought to be permitted.

The commitment to this Home is very simple matter. It contains first of all a certificate from the supervisor of the town, village or ward that the person for whom application is made is a resident of his ward.

Next, one physician of three years' practice certifies that the person is in his opinion too mentally deficient to be taught in the public school and that he or she is not insane.

Then the parent, guardian or next friend signs an application that he be sent to the Home for the Feeble-minded. In accordance therewith the County Judge orders the Superintendent of the Home to receive the person as an inmate. That is all there is to it. There will be no danger that any person will be wrongfully committed, and if there should be one sent there by accident or otherwise, no injury could possibly result as any experienced person about the Home would at once discover the fact, and the child would immediately be returned to its home.

The number of letters that are daily received by the Board of Control testifies to the interest many persons are manifesting

in this new institution. Most of these letters are very pathetic and show that some poor mother or father is looking anxiously for the completion of the Home. They say that they could not bear to let their unfortunate child go to an asylum for the insane or to a poorhouse, although the burden of its care has been something that only they can realize who are in the same situation. If the Legislature shall grant the special appropriation of \$150,000 for the next two years for additional buildings, asked for by the Board of Control, at least 700 persons can be cared for humanely and in accordance with the kindly sentiment that now appears to have entered all hearts when considering this most unfortunate and heretofore neglected class.

REPORT OF COMMITTEE ON COMMITMENT, DETENTION AND CARE OF THE INSANE.

Frederick Wilkins, Chairman.

To the Members of the Ninth State Conference of Charities and Correction:

In presenting, by its chairman, the report of the Committee on the "Detention, Commitment, and Care of the Insane," as a matter of history, the fact should be recorded, that the "Wisconsin System" for the care of the insane is here to stay. Its fame is world-wide. That fame is deserved. Every insane patient in the state is humanely provided and cared for. The old Board of Charities and Correction is legislated out of existence, but its monument remains, immovably implanted on Wisconsin soil, in and through her twenty-five County Asylums.

So great an authority as Hon. F. B. Sanborn of Massachusetts, who has made a full and thorough study of this question said in 1892: "I make the assertion, and I challenge any one to

prove the contrary, that the State of Wisconsin, comes at this moment, nearer to the ideal standard of providing for every person, the treatment best adapted to his needs, than any State in the Union. I have studied this matter for years, have watched and examined the Wisconsin system, and have repeatedly stated (and it has never been disproved) that the insane of Wisconsin are better provided for, in all the essentials of treatment, than the insane of any other state."

The Board of Control, during the quadrennial period 1890-1894 of the democratic administration, under Governor Peck, loyally maintained and developed the system, on the lines laid down, by its founders from 1880-1890. Its successors, under the republican administration of Governor Upham, have continued the policy of their predecessors.

President Heg, of the present Board of Control, in his published address to the National Conference of Charities and Correction, at New Haven, has, publicly, clinched this support, and forever removed the question of the perpetuation of Wisconsin's system for the care of the Insane, from the arena of party contention and attack. He says:-

"Whether its success in Wisconsin is due to special laws or other causes not found elsewhere, I do not feel qualified to say, but its success has been demonstrated by 15 years, and the system is now a permanent institution of the State, which few would want to change.

The most humane and generous care of the insane, compatible with that economy rightly due to the tax payers, is the problem vexing the philanthropic mind nearly everywhere today, and if the country care, as exemplified in the Wisconsin system, is not a complete solution of the question, it comes nearer to it than any plan devised and proved. This system rests upon two principles, economy and humanity, the true basic principles for the care of all our defective, delinquent and dependent classes.

The "old Guard" are passing away. Let us call the roll of honor, and place, on record, a final tribute to a band of noble men and women, who may be no longer in the busy whirl of active public life and philanthropy, from which they were un-

graciously and ungratefully hurled in 1890, but in the calm and sunlight of a truthful history of Wisconsin, will, with memory's hand be gently laved, by an appreciative and grateful people. Mary E. B. Lynde, Elizabeth Fairbanks, Andrew E. Elmore, Dr. J. J. Blaisdell, Willard Merrill, H. H. Giles, Dr. W. W. Reed, Dr. J. H. Vivian and A. O. Wright will be numbered amongst Wisconsin's patriotic sons and benefactors.

Their work is done. What is ours to dare and to do? It is, in and out of season, to jealously guard this monument of the intelligent and patriotic philanthropy of its founders from retrogression and decay, by a "laissez faire" policy on the one hand, and from unwise legislation, and subversion of the fundamental principles on which it rests, on the other.

Is danger ahead? We think it is. Not from malice aforethought, but from lack of sufficient opportunity for, and effective effort towards securing matured and ripe decision on vitally essential points of policy in administration and supervision. We believe a crisis is at hand, that demands the exercise of the wisest judgment, of which unprejudiced and patriotic sons of Wisconsin are capable. With laudable candor and courage (it needs both to officially request, from the legislature additional staff and expenditure of public funds,) the Board of Control, in its biennial report (page 3) have, without reservation, admitted the fact, that it is absolutely impossible for them to efficiently administer the affairs of eight State Institutions, and properly supervise the 25 County Asylums, the numerous poorhouses, jails, and private charitable institutions, which the law requires of, and the Board is supposed to do.

To supply this immediate and pressing need, the State Board of Control in its report referred to above, recommends that: "the legislature authorize the Board to appoint an inspector of the minor (does this term include County Asylums?) charitable and penal institutions, such inspector to report to the Board and work wholly under its direction."

If the Board of Control in such term does include County Asylums, right here, we believe, the danger lies. The very term "Inspector," discloses the existence of an idea, which, we respectfully submit, is subversive of, and antagonistic to the vi-

tal essence and spirit, which must and should characterize the management, supervision and control of such institutions.

The famous penologist, Dr. Fred H. Wines of Illinois, has truly said:

"The word "humanity" does not fully express the thought, that public charity, the gift of the entire people, through their representatives in the legislature, a tax voted upon themselves, for the benefit of the weaker members of the community, is the formal, official expression of the popular conviction, that every civic corporation, is, in fact, a brotherhood.

"Public charity, as we understand it, is impossible, where the brotherly feeling which underlies democratic institutions is lacking,—the feeling, that the taxpayers are not wronged, if that which is voted away, of the people's money, is the lawful due of those, upon whom it is bestowed, a debt of love under the higher law of the golden rule." (New Haven report, 1895.)

The personality of the official administrator and the continuity of his service, are the essential factors to securing the highest attainable value, of what should be, a life's work. It was this very personality, in such men as Andrew E. Elmore, Dr. J. J. Blaisdell and Dr. W. W. Reed, "this soul touch" with the local authorities, which made the Wisconsin system possible and which is a sine qua non to its perpetuation and the acme of its possible development. Such philanthropists as General Brinkerhoff, have prophesied its decay, with the passing of the of its founders.

Wisconsin will not permit this to be. Continuity of service is indispensable to the completion and perfection of any policy, however necessary and correct in principle. Three (3) "Inspectors" during the biennial period of the present Board of Control. Three State Boards legislated in and out of existence since 1890—changes in the personnel of the present Board announced—twice the heads of all State Institutions, except one, removed. Never in its history, we are persuaded, will Wisconsin permit the interests of its dependent wards, and of its penal and charitable institutions, to be so imperiled. The title "Inspector" savors too much of the inquisitorial element, to which the American spirit is unalterably and irrevocably opposed.

Especially true is this, in the management of public institutions, where officers value so highly, need and crave the personal support, counsel and encouragement which the Board of Control has in its power to give, and which, so far as its environment and conditions of the existing system permit, it ungrudgingly accords.

To relegate the County Asylums of Wisconsin to the category of "minor" institutions, and to assign the State's part, in their management, to an official, subordinate to said Board, is a proposition so dangerous, and so foreign to our conception of the true needs of the situation, that we feel impelled, and in duty bound, to strenuously urge upon his Excellency Governor Scofield, the legislature and the Board of Control itself, to avoid the perpetration of what, we are convinced, would prove an egregious mistake.

What are the facts? Again quoting from the Board's report, we find (page 31) that on September 30th, 1896, there were, in the County Asylums 2,816 patients, and in the two State Hospitals 922 patients—more than three times the number in County Asylums than in the State institutions for the insane.

In view of the foregoing, can, or should the County Asylums be regarded or legislated for as "minor" institutions? We are bound to urge that one or even two additional members of the Board of Control (from the State at large) be appointed, regardless of congressional districts, with co-ordinate responsibility and powers, and that to him, be continuously assigned, the duty of the supervision of the County Asylum system, and the remaining institutions, penal and charitable, which the Board, with creditable sincerity and truth, asserts its inability to effectively supervise and control. Then, and then only, will Wisconsin add to the lustre and preserve with undiminished brilliance, the jewel handed down by the old Board of Charities and Correction.

The local authorities—Boards of Trustees and County Boards are, every year, showing increasing and intelligent interest in the improvement of provision and the methods of management of the County Asylums, and, as a rule, endeavor to meet the demands and suggestions of the Board of Control, and of a reasonably high standard of treatment and care.

The power of the Board of Control to withhold financial support, gives, to that body, practically, unlimited influence in molding the policy of the County Asylum authorities. Close personal touch, between the Board and local authorities, and uniform enforcement of orders or "suggestions" and "recommendations" on essentials, will produce valuable results. Uniformity of compliance, especially in the matter of attendants, has been, and still is lacking. Not a word is necessary to demonstrate, that ordinary humanity and decency demand, that every County Asylum immediately provide night attendants — man and wife preferably. The report of A. O. Wright to Governor Upham states, that only two Asylums, Vernon and Milwaukee counties, have made such provision. The present Conference should, without fail, co-operate with, and urge upon all authorities concerned, the absolute necessity of this provision being made, without further delay.

A glance at the following list of practicable and desirable improvements will convince one, that every available energy may, for years, find full scope and employment:

1. Water supply guaranteed more than sufficient for domestic purposes, bathing, fire protection, etc.
2. That hot water supply be ample, to secure to every patient, fresh water for bathing, and the supply continuous, to ensure bathing of filthy patients, day or night.
3. Shade and sidewalks for outdoor exercise, daily in summer and winter.
4. That where window bars are used, access to the room or dormitory be provided, from the outside.
5. That hydrants, hose, hand grenades be provided; and the efficiency of the entire system be certified to the State Board, by the chief of a City Department, or other expert authority.
6. Water closets for each ward and department.
7. More single rooms.
8. No double beds.
9. Sufficient and proper accommodations for employes.
10. Regular and guaranteed relief, of employes from duty.
11. Uniformity in methods of keeping accounts, statistics and records.

13. Minimum standard of ordinary and sick diet—sufficiently elastic to provide for diverse conditions and possibilities.

13. Sufficiency and efficiency of heating and ventilating systems.

15. Equal pay for equal work, regardless of the sex, of subordinate employes.

It may be well to say here, that since your last session, five County Asylums, Rock, Vernon, Milwaukee, Richland and St. Croix, have put in modern steam heating and fan ventilating plants. Asylums built on the plan of Iowa county, as La Crosse, Vernon and others, are so constructed, that with a relatively small expenditure, the inefficient furnaces can be superseded by modern plants, which guarantee that absolutely essential feature of institutional provision,—perfect ventilation and certain and equable temperature.

State Hospitals. Though your committee has been unable to personally visit these institutions, and the reports of the Superintendents are not yet available, the reports of the legislative committee and the State Board of Control are before us, and provide very gratifying material, for hearty commendation by this Conference.

The Board of Control has spared no effort to secure for the acute insane, the best possible treatment from a medical and scientific standpoint, in conformity with the highest modern standards of alienists, of accepted and unquestioned authority. The Board has set the stamp of its public recorded disapproval upon the false economy, and the grossly mistaken policy, which has, and does still too generally prevail, of allowing public property to lapse into a condition beyond possibility of repair, and in its permanent improvements to the State Hospitals has availed itself of modern mechanical improvements, which, in addition to increased efficiency, result in considerable financial saving, to the state.

Another important landmark in public policy, has been finally fixed by the present Board of Control; namely, that the intent of the law of this state be observed; that the Hospitals for Insane be applied to the treatment and custody of the acute insane only.

Hitherto, numerous patients, whose insanity was chronic, have, because of the value of their labor, been retained in the State Hospitals. Alive to the fact that such action would subject the Board to adverse criticism, from some quarters, on the ground of the resulting additional per capita cost, they have yet, in spite of this possible criticism, removed every such case to the County Asylums, and restored the State Hospitals to the use, for which they are by law assigned.

The Home for the Feeble Minded is at last an accomplished fact. For ten years, this Conference has labored incessantly, under great discouragement, for such an institution. Professor Salisbury, the chairman of the Conference Committee on Feeble Minded, and the State Teachers' Association, is entitled to much praise, for his persistent loyalty to their cause, and the Conference, to hearty congratulation, on the final triumph of its efforts in this connection.

The announcement, through the press, that the Board of Control have decided to admit, first, "the worst cases," to the Home for the Feeble Minded, will set at rest much apprehension on this vital question. "An ounce of prevention is worth a pound of cure." The safe custody of all weak minded women, of child-bearing age, in order to reduce the reproduction of this class of dependents, to a minimum, is, or should be, the primary object of the institution.

The fact that, in Vernon county, one feeble-minded family has cost the county over ten thousand dollars, should awaken public opinion to the immense importance of this problem. In selecting as superintendant of the new Home for Feeble Minded the best available man in the United States, and in so doing, disregarding geographical and state considerations and claims and party pressure, the Board of Control has made a valuable contribution to Civil Service reform, and established a precedent of the highest importance to the penal and charitable interests of this state.

Dr. W. F. Becker of Milwaukee, chairman of the joint committee of the State Medical and Milwaukee bar associations will present, to this conference, a paper and bill, for its careful consideration and official endorsement. Dr. Becker, for years,

has been a loyal and earnest student of the defective and dependent classes, and his recommendations, and that of the body referred to, are entitled to our most respectful consideration on this most important question.

For four years, committees of this conference have devoted much time, thought and investigation in an effort to solve it. Judge Ludwig, of the Milwaukee superior court, and ex-president of this Conference of Charities and Correction, has given much thought to the subject during that period.

We hope and believe the bill presented to the legislature by Senator Austin will receive your unanimous endorsement. In conclusion, we would respectfully suggest that a standing committee of this Conference on Medical Jurisprudence be established, and that both the above named associations be represented thereon.

Frederick Wilkins, Chairman,
J. C. Ludwig.
Dr. W. W. Reed.
Dr. J. L. Cleary.
W. W. Pollock.

ARE THE COUNTY ASYLUMS FOR THE INSANE PROPERLY EQUIPPED FOR THE DUE AND SUFFICIENT CARE OF PATIENTS?

Supt. C. S. McKown, La Crosse Co. Asylum.

It seems to me that this subject ought to have been assigned to one more fully acquainted with the county asylums of the state,—a member of the Board of Control, one who had made a visit to all the county asylums in the state within the last year. For I believe there are but few of the asylums but what make some improvement each year.

Probably there are some which are all sufficient and others without the necessary appropriation, that have not made any advancement during some years. A superintendent, to treat on this subject, must of course guard against being personal or prejudiced. If each superintendent of the 24 asylums in the state could be one of 24 jurors to pass judgment, why, this question would be answered in the affirmative.

And this reminds me of the story of the wealthy bachelor, who was present at the Young Ladies' Club one afternoon. The ladies were busy joking him about getting married, until he said, "Ladies, if you will elect one of your number to be the bride, I will marry her." That being agreed upon, they proceeded forthwith to an election. Each lady being very secret in her choice, they got paper and pencils, and used their best efforts to disguise their handwriting. Ballots were collected and counted, and it was found that each lady had received one vote. So if the question were asked, which is the most perfect institution in the state, and answered by the superintendents, the vote would be very scattering.

I have been in the business for 9 years and have visited 10 of the asylums, and when making those visits my principal aim has been to look for the best points, those parts or provisions which seemed to be better than mine, and would be a help to me as a superintendent. I was not looking for the

defects in your institutions, with the view of passing judgment. So for these reasons I think a member of the Board of Control would be the proper person to have this subject.

Before going into details of the subject, let us consider what is due and sufficient care of patients. Generally speaking I would say that good, comfortable quarters, with plenty of good, wholesome food and comfortable clothing, together with the variety of reading and recreation suitable to the wants and necessities of the patients, go a long way toward that end, and might be said to be due and sufficient care. These no one will question to be the right of every insane patient, no matter what may have been their previous condition or circumstances.

For a county asylum let us select a farm of not less than 200 acres, and a wood lot, if in a wooded country, the farm to be situated not more than three miles from a railway station. It need not be located on the principal highway or county road, but a good road leading to the station is very essential. The farm should be so situated that you can secure good drainage and a good view of the surrounding country from your building site. As to material for building, stone and brick seem to be the best available material for asylum building in this state. Solid partitions, finished off with good material, will answer. But let me insist upon good floors, for with poor floors it is next to impossible to have a good, healthful atmosphere. And if you doubt the assertion, I would advise you to tear up a piece of the old floor and examine into its merits.

A good basement, 8 or 9 feet high, well lighted and ventilated, is also essential. You may have part of the ward windows barred, but I think only part is necessary. Have good screens for all windows and doors in summer, and storm windows and doors for winter. Plumbing, heating and lighting should be of the best quality. All rooms should be furnished with heat and light, unless it might be a store room where heat would be injurious to the purposes for which it is used. The temperature of rooms occupied by patients should be kept above the freezing point at all times.

The water supply should be abundant; large cisterns are

no doubt the best for domestic purposes, if properly built and provided with filtration. But in addition to this there should be a generous supply of water well elevated, for lawn and garden use and for fire protection. Four or five thousand dollars expended for a good water system, in many cases would not be in the least extravagant. Often the use of city water could be recommended. Each department should be provided with chemical fire-extinguishers, easy to get at in case of fire, and employes should be instructed how to use them. As delays are dangerous, and if skill is lacking, then chemicals are of but little use in such cases.

A building for laundry work is indispensable to a well equipped institution. The wash room should be provided with good cement floor, also hot and cold water. There should be a drying room for use in stormy weather, but avoid the use of it when the conditions of weather will permit of hanging out doors. It is not necessary to put in expensive machinery, but some hand machines, such as wringers, washers and mangle are very essential.

Good water closets are constructed in various forms, but should never be located in the basement of your buildings. They should be accessible for patients without going out doors, and should be furnished with heat and light, as well as good ventilation.

We should have good drainage, and a main sewer carrying to a point half a mile or more distant from the buildings. Or a shorter distance to a rapid running stream will serve the purpose in most cases. Slop sinks and laundry tubs should be thoroughly and regularly cleaned. Mops, pails, rags, brooms, etc., should have a place in the well equipped home.

As to medical attendance, the physician should be a man well versed in his profession, possessing good tact, good nature and a good heart. This position by all means should not be auctioned off to the lowest bidder. Medicines and all surgical appliances should be furnished direct by the county, and not by the attending physician.

As to the number of employes, one attendant for each twenty-five patients is sufficient in some institutions, while in others one for each fifteen would be a fair proportion. The

conveniences in and about the institution, the class and condition of the patients, have much to do with the care and proper handling of them. I am led to believe that a higher scale of wages would secure better service, with less help, than can be obtained from more employes at ordinary wages.

By a little attention along this line in the county asylums, you can create a stimulus in the employes that will be very beneficial to patients, and consequently to the institution. I believe that often much of the trouble and dissatisfaction among employes is due to the fact that they are idle, either for lack of energy or on account of too much help. There should be sufficient help on the farm and in the laundry, bakery, kitchen and sewing room, so that ward attendants are ward attendants at all times. The sleeping of a farm hand or a laundress or cook on one of the wards, instead of having a regular attendant, should not be tolerated.

An employe who wants to go to town or elsewhere for a day or two should be allowed his full time. Attendants should have at least two weeks' vacation on full pay during the year, besides the occasional day or two. The night watch in some institutions may be necessary as a safeguard, while in others it may well be dispensed with. At any rate it often occurs that a second watchman is necessary to know that the first watchman's services may well be dispensed with. A system of registers will overcome part of the trouble only.

I would recommend a night attendant also for many patients, and this class of patients are more numerous in some institutions than in others. But these patients should not be slept in the same room with the better class of patients, nor should they be neglected. If there is a warm, well ventilated room in the house it should be theirs in cold weather to sleep in. One or more good leather-covered lounges on each ward is necessary for the feeble and aged, who are disposed to rest in that way during the day. Out-door exercise should be provided each day, when the weather is pleasant, for those who are physically able to take exercise.

There should be small rooms to sleep at least 25 per cent. of the capacity of the house. I think a good hardwood bedstead is preferable except for filthy patients, and for them a

bed with foot-board and side-rails would be my choice. The manufactured mattress is not the best mattress, and few if any are equal to the tick filled with clean oat straw, which has been properly put away and kept dry for that purpose. But I insist on frequent change of the straw, and in cold weather the tick should be filled and in the house at least 24 hours before using.

Rugs and mats may be used extensively, and in some rooms a carpet may be used, but only in such a way that it can be easily taken up, dusted and aired very often. Pictures on the wall have their attraction for patients, though seldom noticed. Painted walls and ceiling are far preferable to cal-somine or paper. Each ward' should have a room or hall where the wearing apparel required for patients to go out of doors, may be hung when not in use.

A reception room for visiting friends of patients should be on the ground floor, one for each sex. These might be used as intermediate dining rooms for the noisy, untidy and violent classes. The main dining room should be centrally located and under the same roof, or in other words, patients should not be required to go out doors in going to their meals. A dining table should seat from four to eight. You may cover with oil-cloth, but use linen also on most tables.

A large, well lighted kitchen with a large range, steam-table and warmer, is essential. By all means have a large range, so that in preparing any meal you will not be required to put part of it aside, to make room for the balance, thereby rendering it impossible to serve meals warm and palatable. Let the bakery be an annex to the kitchen, if possible, thus avoiding open doors or drafts of cold air through the bakery.

Sufficient modern appliances should be furnished in the equipment of the asylum, for the effective and proper management of the institution, in all its departments. There are many of the common-place things, such as kerosene lamps for lighting, stoves and furnaces of a back number for heating, and many others, that serve the purpose very nicely; but when better facilities can be had at the same expense, then I say, improve the opportunity and your surroundings without delay.

Upon the question of the combined poor-house and asylum, I have but little to say, and that not by way of criticism of their condition and management. I do not object seriously to the poor-house being located on the opposite side of the farm, under the resident supervision of a good man and a much better woman. But I certainly must protest against the too prevalent practice of locating both institutions in the same yard, probably less than a stone's throw distant from each other, where both poor and insane are associated very closely, yes, possibly under the same roof and eating at the same table.

If any of these circumstances exist,—and I have good reason to believe they do to some extent,—I ask, what is the excuse for it? I believe that the answer is on your tongue,—to save the county a few dollars. Well, I have a great deal of sympathy for the county, especially where these conditions prevail. But I think when a County Board of Supervisors,—and I speak of them as a body representing the county,—of 50 members has got 49 standing committees at work, for the purpose of giving each member the chairmanship of a committee, or possibly something still more ridiculous, then I say it is time to look to the home more seriously and not only to our several individual homes, but to the county asylums.

I have not the time here to take up the subject of clothing, bedding and food for patients. But I think that while county asylums are not overdoing the mater along these lines, they are doing much better than in years past, and that patients do not suffer for want of any of the necessaries, and that in some cases there may even be an over-abundance. But have you ever thought that to have the poorest condition of things in one county asylum, will in time brand all county asylums with its unfitness?

While in attendance at the state conference of C. and C. in Minn., this winter, and in talking with one of the leading men in such work there, and speaking of the county asylums, he said he had seen some of the county asylums in Wisconsin,—meaning that they did not fill the bill. There is too much of a disposition in some counties to allow other coun-

ties to take the lead, or to set the pace, and they will just try to keep within reasonable distance.

How often the comparison is made with a view to reducing or cutting down an appropriation, or, what is more common, making no appropriation at all, for the improvement of the asylum. And I believe the only remedy is that the state exercise its authority, that the Board of Control be more rigid in the enforcement of the law pertaining to the equipment and management of county asylums, and the due and sufficient care of patients.

THE EMPLOYMENT OF PATIENTS IN COUNTY ASYLUMS FOR INSANE IN SUMMER AND IN WINTER.

By A. J. Whiffen, Supt. Sheboygan Co. Asylum.

Mr. President, Ladies and Gentlemen: When I received word from Mr. Wilkins asking me if I would prepare a short paper on the subject of occupation for the insane in summer and winter, my first intention was to answer *no*, knowing full well my inability to interest this intelligent audience on the subject after the many able discussions which we have all listened to in previous sessions. I hardly know what to say, in fact I know of no better way to write on this subject than to simply give my own experience.

Occupation I am thoroughly convinced is nature's medicine for the chronic insane. It has a tendency to keep them quiet; if they get a little tired they sleep better nights; their mind is occupied; their time and attention is taken and diverted from the different manias which seem to be troubling them.

It has been the means of curing the few cases which we have discharged as fully cured.

In this matter I differ widely from a statement made by one of the first members of the State Board of Control after the State Board of Charities was abolished. He said that he did not care if there was not any more than land enough for buildings, flower garden, lawn and grove, or good, pleasant surroundings. The question of employment for the insane in summer is an easy problem with the large farms in connection with the most of our county asylums and good practical men to manage them. The most of the able-bodied men can be furnished employment. I could recommend as little machinery as possible on our asylum farms. Instead of twine binders, horse hay forks and the various kinds of farm machinery commonly used by farmers, I would suggest the use of the old-fashioned reapers which leave the bundles unbound thus furnishing employment for the men to bind the grain. And again I consider the grain much better cut in this way, as it can be cut before it is dead ripe and allowed to remain a few days to cure before it is bound, which makes the grain and straw both much better.

Instead of the horse fork build stagings and pitch the hay by hand from one to another. Quite a number can be employed to tramp the hay who cannot use a fork, thus storing it away in much better condition than it would be unloaded with a horse fork.

I would also recommend growing quite a quantity of vegetables, and if the asylum is located near a city of ten thousand or more inhabitants it is not very difficult to work up a trade for a quantity of them, especially carrots, which are bought by livery men, factories, in fact almost any one who keeps horses. Vegetables are also very valuable for stock as they keep them in a thrifty, healthy condition. Growing vegetables affords a great amount of employment. If they are grown for profit and a large yield they must be planted close enough in the row so that they have to be worked entirely by hand. I have had as many as twenty-three men at work in a field of carrots at one time. The same with a population of sixty-one men, I had employed forty-one

some doing but a very little, but kept busy. I have experienced the most trouble with them on very wet rainy days, when they cannot be kept employed.

In winter it is a little more difficult to furnish sufficient employment especially in very severe cold weather as many of them do not move lively enough to keep themselves warm when exposed to severe weather, and I do not believe in having them out where they will suffer with cold. But many of them can be employed cutting feed, vegetables, &c., for stock. And instead of using horse power machines have the work all done by hand, a large feed cutter with three handles attached and men enough to run it. Cut all feed for stock as it is much more economical, better for the stock, and also furnishes employment for men in winter. Another occupation which quite a number of men enjoy, is caring for and driving horses, some of them fill the place with as much dignity as a cavalry man. There are also many odd jobs which they can be induced to do in winter such as ward work, assisting in caring for stock, shoveling snow, packing ice, helping prepare vegetables, working in basement, cleaning furnaces, carrying out ashes, helping in laundry, and many other useful jobs which cannot be enumerated here. I would also suggest furnishing employment for insane at the kind of work which they seem the most adapted to, for instance, where there are tradesmen among them and they have sufficient intelligence to work at their trade, such as shoemaking, tailoring, carpentering, tinkering, painting, white-washing, &c., and in all county asylums there is work of that kind to be done.

The statement thus far is the occupation furnished men. In most of our county asylums the percentage of men is much larger than women, such being the case there is quite a number less to keep employed and there is also a less number of them who will work. So with the amount of work to be done about the institution such as ward work, cleaning, scrubbing, washing dishes, kitchen work, laundry, washing and ironing, mending, crocheting, making rag carpets, &c., about all who can be induced to work can be kept busy. In summer quite a number of women can be employed gathering vegetables and preparing them to cook, gathering green peas, beans, berries, &c.

TREATMENT OF VIOLENT, REFRACTORY, DESTRUCTIVE AND FILTHY PATIENTS IN COUNTY ASYLUMS.

Supt. William Andrus, Sauk County Asylum.

The subject given to me by the chairman of your executive committee—"The restraint and treatment of violent, refractory, destructive and filthy patients"—covers a wide field, but when it came divided into four parts or given four headings:

First. Restraint, when justifiable and necessary.

Second. Character regulation and record of restraint.

Third. Necessity for organized effort of authorities throughout the state for the recovery of elopers.

Fourth. The benefits and possible degree of liberty to patients and its nature.

Making it cover nearly the whole range and routine of asylum work; and asked that the task be accomplished in fifteen minutes, to one who has had but little experience in putting his thoughts on paper, it is appalling. For it would seem to require the power and wisdom of Him who went about casting out devils. My experience with insane has been entirely practical, and the most I can hope for is to throw out a few hints that will induce discussion that will be beneficial.

First. Their restraint, when justifiable.

And I wish to start with a line from Artemus Ward, "We are governed too much,"—this applies to asylum government as well as to that outside of asylums. Too much government is as harmful as too little. Restraint is justifiable only when a patient is actually doing harm to himself, to property or to other patients.

Second. Character regulation, and record of restraint.

This part of the subject I should have been glad to have left in abler hands. Some one who has had more experience with this class of patients; for it is generally understood in our own county at least, that we have no very bad patients: for the reason they give us but little trouble and restraints are

seldom resorted to. The character of the restraint depends entirely upon the patient, and in applying restraints great care should be exercised, lest something be done that is harmful. The patient should be carefully watched; if the restraint does not prove to be beneficial it should be discontinued, and if occasion requires, other forms of restraint should be resorted to until one is found that *restrains*, or has the desired effect. We have one patient whom we transferred from Mendota in 1892, who has caused more trouble than all the rest of our people, nearly every form of restraint has been practiced on her. Both patients and attendants have suffered violence at her hands. When brought to the asylum she was very destructive—it was almost impossible to keep our windows intact, kindness was thrown away on her. Her propensity for fighting was such that she was a terror to the place. The only effective restraint for this patient is a small rope; usually if this is shown her, she is quieted, but when at her worst she is bound so securely she is helpless—unable to move a muscle—left in this condition five or ten minutes, she becomes docile, and may be released and allowed to go where she pleases with safety. The demons are exorcised, although they do not go down to the sea and are drowned, possibly for want of proper conveyance.

The proper application of water is beneficial. Pouring has its desired results, while a raging maniac was converted into a quiet, orderly woman by the simple act of immersion. Confinement, or to shut a patient in a room alone, is the worst form of restraint, and is seldom beneficial. We have one patient whom we were compelled to restrain in this way, not because he was violent or destructive, on the contrary, he was one of our best patients, but he was determined to lecture on Sunday afternoons. We found he would not deliver an oration without an audience, and when his talking mood came on we placed him by himself. We endeavored to persuade him to drop the habit, that but for this he could go home to his family, but he said "he had no desire to drop it or to go home, that this was a free country, and he had a right to talk when and where he pleased." The battle was kept up for a year, when he made an effort for recovery and succeeded.

The best form of restraint, or rather that which does away with the need of restraint, is *employment*; our patients who are in a physical condition to work give us little or no trouble, our doors are all thrown open at five in the morning, and are not fastened again until 8 in the evening. (In fact our outside doors are never locked.) And our patients go about their duties like ordinary people. If a gang of men go some distance to work, a man is sent with them, but he works like one of the boys. We have no boss or overseer in the ordinary sense of the word. *Work* is the panacea for insanity. We have great physicians, and a prince of a foreign realm, the great Napoleon has found his St. Helena with us, and even the "First Adam" is domiciled here, and they all go about their duties reasonably contented and happy. As far as possible let the patients choose their work, they will usually take up the work they were formerly accustomed to, or to which they are best adapted; and yet we must not forget that all work and no play makes labor irksome, and the individual dull. A variety of games suitable for the season should be instituted. Regular days for games, or evenings for dances should be adopted, as the participants will look forward to these with profit and pleasure. To secure the best results we must *work* with our patients, and also take part in their amusements. We must not hold ourselves too much above them, but put confidence in them and thereby gain their confidence and friendship; and if restraint becomes necessary it is usually accomplished with a word. "An ounce of prevention being worth a pound of cure." I wish to follow on this line and introduce another element that tends to eliminate the need of restraint—*competent attendants*. A good attendant has good common sense, great tact and an unlimited amount of patience, studies the character of each individual under his charge; knows how to approach each one, commands one, requests another, takes others into council about doing certain things, and everything runs on with but little jar or friction. One attendant may tell a patient to do certain things, and it is done without a murmur, but let another attendant, who has not the tact, has not given these matters proper attention, use the very same words in giving the same

patient an order, and fail to give their words the right tone or proper inflection, and war is declared at once. These may seem like small matters, but there are so many small matters connected with asylum work, unless they are all well attended to, trouble will surely follow. Be sure your attendants are doing good work, then if a patient complains you can tell him whatever is being done is for his good, and thereby avoid friction and discord.

In regard to filthy patients, little can be said but much can be done. Eternal vigilance is the price of cleanliness. Experience tells us that with clean rooms, wholesome beds and convenient closets, many of this class of patients may be reclaimed. And since the introduction of the fan or blast system, the terrors of filthy patients has been swept away. No asylum can be said to be well equipped without a good blower.

Thus far we have found our monthly reports a sufficient record for restraint. For the year just past we were compelled to report one-half day, and this was the patient whom we bound, the one-half day constituting the whole time she was so restrained. The other patient on account of his general good behavior, and our strong hopes of his ultimate recovery, we thought best not to place on record. The last four months of his stay with us he took farm hand's place, and was then discharged. This patient was admitted to Mendota Hospital May 19, 1891, where he remained until June 26, 1895.

That there exists a necessity for organized effort for the recovery of elopers there can be no doubt. A project to bring about this result was broached to me more than a year ago by Mr. W. T. Andrus, who then held a position in the asylum.

There should be published in this state, probably in this city, under supervision of the State Board of Control, a sheet or pamphlet, to be an organ for charitable and corrective work, to be issued at least once each week. It occurs to me this would be of great benefit, not only for the recovery of runaways, but would tend to bring those who are in the work closer together. They could work more in unison, and their efforts would bring forth better results.

I shall say but little on the fourth branch of this subject for fear of repetition and that I am taking up too much of your valuable time, and close by saying: With work and rest, pastime and means of instruction, an almost unlimited amount of freedom may be given, and the benefits derived therefrom are incalculable.

HINDRANCES TO THE PROPER AND EFFICIENT MANAGEMENT OF POOR-HOUSES AND JAILS.

E. O. Holden, Supt. of Poor, Baraboo.

An ideal is a conception of the mind for imitation, realization or attainment. The imagination is the active agent in the formation of an ideal. This power of the mind takes from memory and scenes perceived by the senses and forms new combinations. The elements of all such productions of the imagination are regulated by the knowledge, the taste and the intellectual habits of the author; and whether these conceptions are elevating or debasing depends upon his moral principle. It may seem strange to you to speak of an ideal jail or poor-house, or to speak of a conception of its proper management and control as an ideal to be attained.

When you have the individual and seek to find or to estimate the ideal of a party or community you find confusion and uncertainty.

This is plain to an observing man, for who knows surely at this date just what he ought to believe in religion or to vote for in politics or finance. Of one thing we may be assured that our government is founded on the doctrine of averages and that the laws enacted will correctly show the av-

erage moral character of those who pass them. In most instances the laws enacted are above the moral character of the people and are so because each one has a higher sense of his neighbors' obligations than of his own. There are few that do not condemn themselves for many things they permit themselves to do.

The hindrances to the proper management of our poor-houses and jails arise from lack of a proper idea or ideal of the ends to be subserved by them in respect to charity and discipline for the poor or for the deterrence from crime or the reformation of criminals. I think I am expressing your thought and observation when I say that there is no ideal in the public mind with regard to either of the institutions referred to. Their support is a burden severely felt by the tax payers, especially when the tramp question comes into view, that the cheapest way or what looks to be so is the course adopted without considering any ultimate questions.

Well do I remember when elected superintendent of the poor in 1881, the first visit I made to our poor-house and was shown the asylum in which were confined ten or twelve insane, kept in cells made of 2x4 pine bars with a narrow bunk on one side, with a wooden pipe running down into the basement for a water closet, with a hole through the grated door through which to pass their food which was eaten with their fingers; without clothing save a ducking gown coming down to their knees. I cannot describe the stench that filled the building. At the time this method of caring for the insane was publicly approved, and these unfortunates were shown as freely to visitors as any other part of the house. What a contrast is shown by the present condition and care for these unfortunates. Then the method of their care was approved as the present one is now.

No protest was ever made nor any appeal to the sympathy of the merciful for a betterment of their condition. It was thought to be the best that could be done, in fact it was the ideal of the multitude and was the method throughout the state. But there were a few men who had a higher ideal and faith in it too. This led to the enacting of the law for the founding of the present county asylum system for which

the State Board of Charities and Corrections should have the praise, which as you know was swept out of existence by a wave of pseudo reform. The poor-houses have been benefited by the improvement in the care of the insane. These are so closely related to the asylums that it is difficult to speak of one without including the other.

There were on June 1st, 1890, 340,000 persons in the different penal and charitable institutions of our country, 111,000 of these were in institutions founded by private enterprise and benevolence controlled by boards of trustees incorporated by laws. There are more children cared for in private institutions than adults. I think that an examination of their work would show that it was as thoroughly and as successfully done and as fully accomplishes the end for which they exist as any under state control. I believe that except where there is a large endowment and the managers are industriously spending it and it costs them no exertion for funds that the work is done for less money per inmate. They are free from political control. Their offices are not changed with the coming into or the going out of power of political parties. The motive leading to seeking of employment in them is different—has more of altruism, less of self-seeking in it.

Far too large a portion of our people look upon the state as something out of which to get benefits. The ambitious politician wants his turn at the public crib and when he gets there his self-interest outrides the keen sense of duty that should be the guiding principle of his action. By reason of the resident overseer on whom the successful management of the institution has an uncertain tenure of office he only knows that he is to stay for a year at a time. The incentive to plan for the future is taken away and he works chiefly to secure the approval of the managing authority. This results in reducing the work in these institutions to an injurious level of method and efficiency. The per capita cost at an institution is not the only criterion of successful management. The first consideration should be the betterment of the inmates and the immediate manager should not be dictated to and overridden by any trustee whose only measure of success and

mercy is just dollars and cents. Often times the saving of the last hundred dollars of a thousand renders the whole expenditure useless or greatly damages it. An institution will be what the managers make it. The control on the part of the trustees or board should be of a stimulating, sympathetic character. No trustee should interfere with the detail of the management. Nor should he send any person there and dictate his employment. When this is done let the trustee manage the whole business and the overseer seek some other business employment. There can be but one executive in any business that is successfully managed. A poor plan well carried out is better than the wisest one bungled by men that work at cross purposes. The inspection of these institutions should be by men and women who are in sympathy with the purposes and plans and aims to secure which they were founded. This inspection should be made in a spirit of helpfulness and encouragement. It should be stimulating and hopeful. The trustees or board should be present so that many get new ideas and thus be led to sanction some advances in the line of the objects for which the institution exists. As Agassiz said when asked to write a text book on zoology, that he hadn't time, that there were enough now. What was needed was more students of nature. So the study of individuals should be stimulated so that a mind diseased may be ministered to. As to the jail as it now exists there cannot be much said against them as to their construction, sanitary condition and other appliances. Those of recent construction are well built and represent a large outlay of money. They are very expensive agencies and show very poor results and it might be truthfully said the opposite of those intended, in that they become schools of crime. Places where, by reason of the indiscriminate association of the hardened criminal with the beginner in crime, in idleness, often with the Police Gazette and cards, the time of sentence or of waiting for trial is spent many times in laying plans for future crimes when released. The experienced criminal becomes a school master for the prisoners, and the incarceration increases crime instead of preventing it. The sheriff is by the constitution placed in charge of the jail and its inmates. He cannot suc-

ceed himself in office, so the constitution provides for and perpetuates this state of things, and it would seem that the first thing to do would be to remove these constitutional restrictions. By reason of the inexperience of this officer a career of crime is no more hazardous so far as success is concerned than a business career. Not one-fourth of the robberies are detected and punished. The sheriff, the executive officer of the county, is always an inexperienced man, just as he gets knowledge enough of the business to serve a writ according to law he must step out for an apprentice. Another very bad condition is the method of payment by fees. *It is a fatal error to admit private interest in any form whatever into the public punishment of crime.* Another error is that the compensation of the sheriff should depend upon any profits he may make out of the board of the prisoners. Most of the sheriffs are now in disagreement with their county boards. All sorts of bargains and agreements are made between them dictated by an effort to economize on one hand and by a desire on the other side to make the two years of official life as profitable as possible. This results in the pauperizing one official and enriching the next. His compensation depending upon his address or management, his political pull and the conjunction of congenial, manageable committees of the county boards with the official. There are too many jails; the average number in the jails of the country is only five, many of them stand empty a large part of the time. And when the number of the prisoners are few the temptation is to make too large an allowance for their board and care. One-third of the jails of our state could be dispensed with and the prisoners concentrated in those remaining and thus money could be saved and some kind of employment and classification of prisoners could be had. Another bad feature is the detention in jail awaiting trial and the very frequent postponement to succeeding terms of the court. A person accused of crime should be tried just as soon as the proofs of his guilt or innocence can be gotten together. A lawyer once said to me that the best defense oftentimes was a postponement of trial, for he said the public soon forgot that any offense had been committed and the witnesses became scattered. In the

jails constructed after the latest and most approved plans, where prisoners could be separated do not accomplish the purpose, for sheriffs do not keep them as they might and the county boards do not furnish the help necessary to do it. In one county the board recently by resolution directed that the sheriff should render an itemized account of his expenses for the boarding of the prisoners, made no allowance for a turnkey or jailor. The sheriff must, if he has any help, pay for it out of the civil business that comes to him. In this jail there are now six prisoners. I have known a sheriff to leave a jail for several days in charge of his wife who fed and cared for the prisoners while he was absent. He was intending to make the most of the office and he did. I stated previously that there were too many jails. Suppose that Sauk, Columbia and Dane counties were formed into a jail district. Locate the jail at the most convenient center as related to transportation. Put this jail under the charge of a board of trustees to be appointed by the judge of the circuit court. Let this board select the warden of this jail without regard to politics, select him for his fitness for the place and keep him there. Let each county pay its proportional share of the cost which would be reduced by this method to its lowest terms. In this plan is, as may be seen a solution of the tramp question and the tramp work-house. It could be such for the three counties. But this cannot be done for these counties have recently completed each a jail costing in the aggregate over \$80,000. Do you not believe that these costly structures with the castle insane asylum will stand, if not changed to other uses, as monuments of our stupidity and failure to perceive the correct method of dealing with the criminal. In the words of another, "Too much use is made of the prison. Multitudes of convicts are in confinement whose release would work no possible harm to society and who deteriorate in prison but would profit by free association with their kind in every-day life. They have not been wrongfully convicted but they are needlessly held. The prison has done for all it can do. There are others who, having been convicted, would have been more likely to mend their ways if never incarcerated. Many men on the outside have committed the same acts, with no higher motives, but are re-

spected, useful and happy because the criminal law was not brought to bear upon them. Those most familiar with crime, criminals and prisons are least willing needlessly to jeopardize the entire future of an occasional offender, especially in youth, by his arrest and prosecution so long as there is any reason to believe that he can be turned from evil courses by less stringent and irrevocable means which do not involve life-long disgrace. It has been well said that the prison will never fulfill its highest purpose until it shall have put an end to the necessity for its own existence. The abolition of the prison (but not until there is no longer any need for it) is the dream of the prison reformer. Not that he has any immediate expectation of the realization of what he trusts may prove to some far off generation to have been a prophetic vision. But there are many cases in which police surveillance might perhaps be substituted for it and that in the near future. And one reason for the adoption of the indeterminate sentence is that it seems to the eye of faith to be a step in the direction of this lofty ideal.

STATE CARE OF DEPENDENT CHILDREN.

Prof. A. L. Graebner, Concordia College, St. Louis, Mo.

In speaking of dependent children, we take up for consideration a category of human beings belonging to one of the three classes of abnormal humanity, these classes being, according to a classification still accepted for want of something better, the *defective* class, the *delinquent* class, and the *dependent* class. In another sense, all children are dependent also under normal conditions. But when those on whom their temporal and

spiritual welfare should under ordinary circumstances chiefly depend are either unwilling or unable to perform their duties toward their children, provision for whom is incumbent upon them, such children become dependent in the peculiar sense in which we speak of a dependent class in sociology and of dependent children in the present treatise.

When we would contemplate a child as under *normal* circumstances, we must not confound this notion with that of *primitive* circumstances, in which the family is at the same time both church and state, the father being not only the parent and the head of the household, but also the spiritual teacher and adviser, and the ruler and protector of the family. These are in our day and country no longer the normal circumstances of civilized domestic, religious, and political life, under which the children of the family, the church, and the nation, are to spend the years of their naturally dependent infancy. In the state of society established round about us, the family, the church, and the state, have their peculiar duties to perform in order to secure the best interests of the rising generation. But inasmuch as these duties are to a great extent moral duties, they do not directly concern us, when the care of the state for dependent children is under consideration, since on the one hand it is not within the proper province of the state to enforce the performance of moral duties as such, and on the other hand the care of the state for dependent children begins where the family or the church are either unable or unwilling to provide for the children what in the interest of themselves and of society should be provided in their behalf.

But while the duties pertaining to the family are primarily moral in the main, and those of the church, moral exclusively, and viewed from this point the family and the church are responsible for the performance and neglect of these duties to God alone and are controlled in their moral aspects by the various functions of human conscience and by the administration of the divine ordinances established for the economy of religious and ecclesiastical life, the family appears also in another and a different aspect, in which it comes within the proper province of the state, and in this respect there is a well

definable parallelism between the family and other factors with which the state extensively deals. The same institution or the same act of a moral agent may be looked upon either in its moral or in its civil capacity. Thus matrimony may be viewed as a divine institution regulated by the divine law, and as a civil institution governed by the law of the state. Theft and murder may be considered as moral offenses or sins against the law of God, and the same acts may be considered as offenses against the common or statute law and dealt with as crimes. More than that, the same act may be looked upon as morally objectionable and damnable by the church, and with equal propriety ignored as indifferent by the state. Thus as a theologian I look upon the breach of a betrothal as a rupture of the bond of matrimony, while the state here finds no bond of matrimony and hence no breach of such bond and will not sustain a charge which the church may be bound to sustain and to adjudicate against the offending party or parties according to the moral norm. Going to the bottom of the question, the magnitudes with which the law of civil courts must deal are, without exception, merely civil in character and in fact creations of the state; they are in their relation to the state what the state makes them, neither more nor less. Thus matrimony is in the eyes of the state not what the law of God, nor what a church has made it, but what the state makes it; it begins where it is recognized by the state, not where the moral law or the church would fix the beginning of the status; it terminates, not where it has become extinct in the estimation of the church, but where the civil status has terminated under the judgment of a civil court or according to the laws of the state. The status, rights, and duties, of husband and wife are, in their civil aspects, neither more nor less than the state has determined them to be and may be different in different states. The union of cousins may be marriage in one state and incest in another; and where the state has established no such thing as divorce, there is no such thing under the jurisdiction of the state. The state may make a man a father by law who is not a father by nature, and a child illegitimate when born may become legitimate by subsequent intermarriage of the parents because and to the ex-

tent the state has made it so. In short, every civil status or civil right as such is a creation of the state and is neither more nor less than the state makes it by the enactments of its legislatures or by the adjudication of its tribunals.

This doctrine applies also to the civil status of infants. An infant is an infant at law not by nature, but by and according to the laws of the state. The state may make one person an infant at twenty and another person an adult at eighteen years of age. At the common law males and females are infants to the age of twenty-one years; by the statutes of many states females attain their maturity at eighteen, in some the minority of both males and females terminates with lawful marriage. A boy of fifteen years may be able to take care of himself better than some men at twenty-five; but he is still an infant because the law makes him such, and a contract concluded by him may be void or voidable on account of his status established by the laws enacted for the infant's protection in consideration of the legal presumption of the inability of infants to take care of themselves. The normal condition of a child then is, as far as its civil status is concerned, not its physical condition according to physical laws; nor its condition according to the moral law, but the aggregate of circumstances determined by the state. These provisions may differ widely in different states. In the ancient Spartan commonwealth the child was primarily the child of the state and withdrawn from the influence of the home and family as early as possible, the normal condition of a Spartan boy of ten being far different from that of an American schoolboy of to-day, though the physical nature of the boy and the moral relation of parent and child were the same in Sparta 2,500 years ago as they are in Wisconsin to-day, while that which was normal in Sparta then is precisely what takes place under abnormal conditions in Wisconsin in our day and lies as a social problem before us, the state care of dependent children. This radical difference is owing to the corresponding difference between the antique and the modern notions concerning the mutual relations of the individual and the commonwealth. According to the prevailing notion of antiquity the state was everything, the individual

nothing aside from being a factor for the protection and maintenance of the republic, while under the influence of Christianity the civilized world has learned to look upon the individual person as the primary unit of social life, and the protection of the individual person as a member of the community, the chief end and purpose of the state. To the protection of the state a child is entitled according to the modern view of the state by virtue of its personal existence as a member of society. The infant as well as the adult is entitled to the security of life, limb, health, liberty, property, and honor, and to afford such security is the great purpose of civil government and the legal organization of society.

But while the state deals with the members of society in their *civil* capacity only and in accordance with the norms established or recognized by the state, the very principle that in the modern state the personality of the individual is to be respected, implies the right of liberty of conscience and religion for every member of organized society. While in the states of antiquity religion was, quite consistently with the antique notion of the state, a state affair, the gods and their worship being the gods of the state worshiped by the body politic and by its individual members because of their connection with the state, the modern state should consistently leave the duties of conscience to the individual without any state interference whatever, and thus it is that the idea of a modern state is most fully and consistently carried out in our country to the great advantage of the individual, the family, the church, and the state. It is of the very essence, however, of the liberty of conscience that the individual should settle all questions of conscience and religion with God and with the church whom God has endowed with the powers and norms to adjudicate such questions, and that the state should not endeavor to enjoin or enforce moral duties or punish moral offenses as such or in any wise interfere with moral and religious affairs. Hence in the performance of his parental duties as matters of conscience, or morally considered, the parent must not be interfered with by the state. Nor is it *necessary* for the welfare of the child that the state should encroach upon the moral domain while the parent

performs the duties imposed upon him by the moral law in relation to his child, since the moral law enjoins upon the parent the utmost care not only for the spiritual, but also for the temporal, welfare of the child, and since the proper or primary function of the state in behalf of the child is protection only, there is no occasion whatever for the interference of the state while the parent is watchful of the security of his child's life, limb, health, liberty, property, and honor, as enjoined by the moral law even more stringently than by the reasonable laws of the state.

Nor is state interference necessarily called for whenever the parent neglects his moral duties toward his child. The *church* also has duties to perform toward its children, and these duties being likewise moral in their nature, the state must not presume to prevent or preclude the church from their performance. The members of the church, old and young, being bound together by the bonds of brotherly love, owe each other all the aid within their power which may be necessary for their temporal and spiritual welfare, and where the church is able to afford relief, it stands disgraced when its infant members are thrown upon the hands of the state, while, where the church performs its duties of fostering love toward its infant members, the state will rarely find occasion for providing the necessaries of life to the children of the church.

The church, however, can by no means consider all the children of society at large her own. Nor do all parents conscientiously perform their moral duties toward their offspring, many being unable, or unwilling, or both, to afford what is necessary for the temporal welfare of their children. More than that, the parent may be so depraved as himself to endanger the security of his child's life, limb, health, liberty, property, and honor. And these are the circumstances under which the turn of the state has come, inasmuch as the principal function of the state is to secure protection, to afford security to all the members of the community. It is not incumbent upon the state to furnish every man, woman, or child with free means of sustenance, with house and furniture, or with a polite education, but its purpose is to afford to every

member of the community security in the possession and enjoyment of as much life and limb, of health and liberty, of property and honor as he or she may lawfully possess and use without infringement of the lawful possession and enjoyment of these things by their fellow men. Where the civil rights of an individual are not endangered or rendered insecure, the state has no occasion to afford that to which the members of the community are entitled at the hands of the state, protection, and it is thus that every conflict between the family and the church on one side, and the state on the other, may be avoided and should be practically as well as theoretically excluded without detriment and damage to the infant generation of the country. In its bearing upon this doctrine it is immaterial whether the parental functions enjoined by the moral law be looked upon as rights and privileges or as duties, since, while they are moral in their nature, they do not in any wise concern the state, and while they are efficiently exercised in the proper care of children, there is no need of state intreferece or of a conflict or clashing of interests. On the other hand, it is immaterial whether the family and the church be neglectful of duties or of privileges, when such neglect results in the necessity of a third agent to insure the civil rights of the children who suffer the curtailment of such rights under such neglect, since in this case also there will be no collision between the various agents, the moral agents having stepped out, before the civil agent, or the state, steps in, the default of the one having in fact been the occasion of the action of the other.

Here, then, we are made to face the question, in what manner and by what means the state, having been called into action in its proper province, may and should afford that to which the protegés of the state are entitled at its hands. We remember that the parent is a parent not only under the moral law, but also under the political law, being himself a member of organized society, and it is within the province of the state to enjoin upon the parent certain parental rights and duties, which may and should be, in a measure, materially, though not formally, the same as those imposed by the moral law with reference to the temporal welfare of the child.

Inasmuch as such duties are imposed by the laws of the state, it is furthermore within the province of the state to enforce the performance of such civil duties. Where this can be done, it should be done by the exercise of the police power of the state. When by the laws of the state it has become the civil duty of the parent to care for the life and health and honest maintenance of his child, the willful neglect of such duties should be dealt with according to law, and proper penalties should be inflicted. By wise legislation and proper administration in this direction much might be done toward a better condition of many children who now become dependent upon the state for that which the family should provide, and while there is still room for improvement in the sections of our statute books referring to the protection and care of children, more stringent administration of the laws seems to be still more desirable everywhere. Especially should legislation provide for ways and means whereby the state might be made more readily and reliably cognizant of a parent's neglect of furnishing sufficient food, raiment, and shelter for the preservation of the health of his child, and whereby the proper remedy might be secured by holding the parent to perform his duties according to law and his ability, or suffer the consequences.

Where a child is thus with or without coercion by the state reared and provided with reasonable necessities in the family and by the parent, the normal conditions and circumstances established or recognized by the law prevail. But in many cases these normal conditions and circumstances cannot be sustained because of the persistent unwillingness or the inability of the parent to perform his or her duties. Perhaps the church or private charity will volunteer to step in and supply the deficiency on moral motives, and it has already been said that there is no reason why the state should bar the church from exercising charity toward its own. It would even seem to recommend itself that the civil authorities should, where church membership appears in the case, inform the organs or agents of the church and give them notice of the opportunity for affording aid in cases of which the church may be ignorant. But as the church as such is

not a civil institution, the state cannot consistently enjoin duties upon the church, and it must be left to the free choice of the latter whether it would or would not supply the deficiency in a given case. Should the church or private charity fail or decline to afford relief, the child becomes dependent on the state, and the action of the state should be prompt and efficient in behalf of the child.

But the body politic performs its functions through its *organs* or *agents* acting under its authority, supervision, and control, and here the question arises, of what description the organs and agents of the commonwealth for the care of dependent children should be. As in equity, so also here the remedy should approach as near as possible to that by the absence or default of which the deficiency for which a remedy is sought exists. Thus where the parent is by reason of extreme penury unable to provide what is necessary for the maintenance of the life and health of the child, it would, under favorable circumstances, be eminently proper to make the parent himself the agent of the state by placing into his hands from the public funds the necessary means wherewith to procure the necessaries he cannot by his own means provide. In this way the child would still remain in its normal environments, the family, though dependent on the state, the parent acting not as the parent, but as the agent of the state, in the disbursement of the means afforded by the state, and being accountable to the state for his stewardship. But as agency everywhere presupposes the ability and willingness of the agent to perform his functions, this course could be pursued only when the parent is known to be in every way reliable and as long as his accounts to the public authorities, and the satisfactory results of his services rendered, continue to show his trustworthiness. Where this is wanting in the parent, the state must look for another agent, and in such cases a temporary or permanent guardian possessing the necessary qualifications might be appointed, to whom the judicious disbursement of the necessary means afforded by the state in behalf of the dependent child might be entrusted, while the child still remained under the paternal roof and enjoyed the benefits of a family home. Thus many an indigent

widow's child might be maintained by the state under a mother's care and kept from drifting into the delinquent or defective class, and that at an expense no greater than or not as great as the cost at which dependent children are fed and clothed and housed in public institutions, another advantage thus secured being the feasibility of at any time withdrawing the state's assistance without again changing the environments of the child, when such assistance may have become superfluous.

There are other cases, however, where the removal of a child from its home appears necessary, or where the family has become disorganized, as by the death, desertion, or imprisonment, of the parents and the absence of grown members of the family able to provide for their younger relatives. A home which has become a hot-house of lewdness and debauchery and crime in any form is no longer a place where a child's life and health, liberty and honor are secure, or where it may remain without detriment and damage to the community, and it is in the interest of the child and of other members of society to whom the state owes protection of their civil rights, that no child unable to look to its own best interests should remain in such surroundings. But while it is clear that, while such circumstances last, the removal of the child is of imperative necessity, we must not jump at rash conclusions in mere doctrinary speculation, but consider the practical difficulties with which the state has to deal in the adjustment of such cases. In the first place a parent may forfeit his civil status and be declared a parent no longer at the law of the state, while he still remains a parent under the moral law, under which the resumption of his parental duties should work the restitution of his parental rights. A depraved father or mother may reform and become once more the most appropriate person to have charge of his or her child. In fact, the fundamental cause of the difficulty with which the state must forever grapple is the impossibility of finding a real equivalent for a home with a natural father and mother. Even in the home the father can never supplant the mother, nor the mother ever make up for the father. The last thing, therefore, to which the state should allow itself to

be driven, is to take a child away from its natural home. The home may need reform. Then let it be reformed if possible. The home may need subsidy from the state; then let it be subsidized; and only when it is beyond reform or remedy, then let it be abandoned and supplanted by something as near a natural home as possible. A father may be placed under bond in behalf of his child's security with no less propriety than a husband for the protection of the wife; or a guardian may be placed over a spendthrift father to take charge of a part of his earnings in the interest of the child; and thus in various ways the child may be protected by coercing the father to perform the duties imposed upon him by the state, such coercion being the more appropriate since thereby the child may be protected without being deprived of what can never be replaced. Or it may be necessary to exercise coercion upon others in order to rectify the parent. Let a saloon keeper who knowingly furnishes intoxicants to a father or mother to intoxication or after official warning be punished by the withdrawal of his license or by fine or imprisonment adjusted to aggravating circumstances. In general, resort to every available measure for saving the child by saving the parent, and if it appear necessary to remove the child from the custody of the parent while efforts at the latter's reform are being made with any prospect of success, let such removal be considered temporary with a view to the restoration of the child to the family, where it properly belongs, the prospects of such restitution being apt to work as an incentive to reform in cases where efforts in that direction would otherwise fail. Even the momentary willingness or eagerness of the parent to relinquish his or her parental rights should not easily be looked upon as sufficient cause to place the child into other hands as by permanent arrangement. To sum up, the state *can* not absolve a parent of his *moral* obligations as such, as little as it can impose moral duties as such, and the state *should* not, unless it be under the stress of extreme necessity, cast aside one of its most important institutions, that of the family with its family relations; but as the presumption should always be for, not against, matrimony, and undue readiness to grant divorces tends to undermine the very foundations of society,

so the presumption should likewise be in favor of the relation of the parent and child with its rights and duties, and even under adverse circumstances every measure to better those circumstances should be exhausted before the civil relation of parent and child should be permanently abrogated in a given case and relief afforded by one of the measures and methods hereinafter described.

What has been said concerning the relation of parent and child applies also to a category of cases not hitherto touched upon in the present treatise, the illegitimate fruits of illicit love or extra-connubial passion. I am fully aware of the extreme delicacy of this subject and shall not enter into its details further than absolutely necessary. Letting alone the moral and religious aspects of the question, which do not concern us here, as lying beyond the proper sphere of the state, I would on the one hand say that I cannot but look upon certain sentimental tendencies toward obliterating or covering up the social stigma attaching to extra-connubial maternity brought on by voluntary indulgence as being highly detrimental to the well-being of society. To construe into a misfortune what is an opprobrious offense is itself an offense, a falsehood, which should be most strenuously discountenanced as not only tending to prepare a level way for licentiousness, but, what is of far greater consequence, to undermine the very foundation of precisely that institution which of all social institutions should be most carefully guarded and without due regard to which all our best efforts in the care of dependent children must prove a lamentable failure—the family, yea, the family, which must forever be prized as the most propitious harbor of safety and refuge also for the deplorable, stigmatized, unwedded mother, and her, generally, ill-fated offspring. And thus I am already on the other side of the question, pleading the cause of this class of children by pleading, first of all, the cause of their mothers. Even such a mother, I would say it with emphasis, is, if willing to perform a mother's duties, better by far than no mother at all, and whosoever task it may become to save a child of this description, be it the family, the church, or the state, let us be assured that the surest way of socially saving that child is by so-

cially saving the mother. And let us be, furthermore, assured that to save both mother and child, the most propitious climate and atmosphere will be, once more, that of the family, first of all the family of which the mother is herself a child; some other family, if her own family cannot or will not receive her. And here let it be said that however keenly an honest father and mother may feel the disgrace which has been brought upon their name by a fallen child, that fallen child in all her depth of shame is still their child, and is, unless she herself should renounce her filial allegiance, entitled to a place not only in their hearts, but also at their hearth before ten thousand virtuous daughters who are other people's children. Nor should society look awry upon a father who gives a fallen child a father's welcome, or deem it an act deserving of a hero's laurels if a father, to vindicate his offended honor should turn his offending child in her disgrace adrift in the snow, the snow, the beautiful snow.

But what if the family relations have been hopelessly shattered or have been terminated by death, and the charity of relatives, or of the church, or of charitable societies, does not intercede? In these cases, the child having for the time being become dependent on the state, the state should not at once assume that such dependence must continue. The first efforts of the state should in such cases be directed toward restoring to the child what it has lost—a father and mother, foster parents who would make the child *their* child by full adoption. The choice of foster parents being a matter of far-reaching consequence to the child, it must, of course be performed with the utmost care and circumspection. It must be remembered that the desire of adopting a strange child very rarely springs from motives of benevolence, but is commonly dictated in the main by the desire for the society or service of the child, its adoption being simply or chiefly an acquisition of present or prospective value. Though this is not necessarily an immoral motive, it must not be ignored, but taken into account and properly rated. The saying that the demand for foster-children will prove greater than the supply, should, if credited at all, be taken with a grain of allowance and with due discrimination against such as profess to desire

a child while they are in quest of a servant, pure and simple, minus a servant's wages. As a rule, childless couples, or such as seek a foster-brother or sister for a single child, or those who have lost a child and desire another of the same sex and age, well deserve the preference as foster-parents; next in order will be families with daughters only or sons only and soliciting a child or children of the opposite sex; lowest in the scale we should generally place families with an abundance of children and looking for an able-bodied boy or girl to do the work their own children may refuse to do. As regarding foster-parents, I hold that they should not be considered the agents of the state, but as principals taking from off the hands of the state children who for the want of parents have become wards of the state and should cease to be such as soon as the want has been satisfactorily supplied. While, therefore, where children are placed out as the state's wards, the choice of the child's prospective abode can and should be supplemented by subsequent supervision to insure success, the success in placing a child by adoption will hinge entirely on the selection of the foster-parents, and for this reason full and sufficient information should in all cases be secured, first by question sheets to be filled in by responsible persons, then in the same manner from neighbors and business men acquainted with the applicant, and, lastly, by personal inspection through an official agent or officer of the state. This does not exclude a period of probation with corresponding supervision before the adoption shall be considered complete and valid. But after the expiration of such period, the child should be considered no longer a dependent child, but as on an equal footing with other children who live in the enjoyment of a home of their own. This again does not exclude the possibility and propriety of complaints lodged with the state authorities in cases of neglect on the part of the foster-parents to perform a parent's duties toward their adopted children, just as under the same conditions natural parents may be drawn to account for neglect of their parental duties. But aside from this, the state should hold itself exonerated from the care of children taken from its hands by a full adoption and thus removed from the class of dependent children to the shelter and protection of a real home.

In spite, however, of all endeavors to pursue this course, there will always remain a considerable residue which must be differently dealt with. There will always be homeless children whom nobody will make his own by adoption. I am not speaking of those degenerate boys and girls who have drifted into the delinquent class, young malefactors and so-called incorrigibles, but of those little unfortunates known as undesirable children and others who remain on the hands of the state. What will the state do for them? I would answer, let the state once more keep in view the fundamental doctrine that the proper place for a child is in the family, not any family—for if there are undesirable children, there are undesirable families as well—but a family with a family's wholesome influences. If such a family cannot be found wherein to place the child as an adopted son or daughter, then let endeavors be made to place it there as an inmate of the family dwelling, with a place at the family board, the opportunities of schooling and of regular training in the occupations of a civilized household, also with its share of the pleasures and burdens of home life in its allotted sphere. There may be natural relatives who would be willing to take charge of the ward of the state, but unable or unwilling to bear the expense of maintenance, or to serve without remuneration. Let them be engaged and subsidized or remunerated from the public funds and, of course, supervised and held accountable by the state. Where relatives cannot be induced to serve as agents of the state in the capacity described, the circle of friends and acquaintances with whom the family may have been linked might next be canvassed with a view to preserving as much as possible or advisable the connection of the child with its former family relations in placing it out under state subsidy and control. A strange family with a natural head and judiciously selected would be next in order; then artificial families in state institutions conducted on the cottage plan, each cottage being managed by a married couple with or without children of their own, while a common school, a training school, a garden, and a farm complete the means of educating useful members of society where without the various provisions hitherto enumerated a generation of paupers and

criminals would grow up to be later on fed and clothed and housed at the expense of the community in order to afford protection against their inroads upon the rights of their fellow-men. And thus it once more appears that the state care of dependent children is not properly charity, but simply that protection which is the primary purpose of the state, protection to the dependent children themselves and to the community. To confound it with charity or to carry it on as a charity might or should be carried on,—as, when the agents of the state are by lack of reasonable compensation and by a corresponding lack of state control, led to mistake their services to the state for charity bestowed upon the children,—will result in the total or partial failure of what might otherwise have met with a fair measure of success. It must, therefore, appear highly improper and objectionable that churches and societies professing charity as their sole purpose should be subsidized from the public funds or remunerated by the state for their works of charity. On the other hand, societies of citizens banded together for sociological endeavors may render valuable assistance to the state as such, and the state will act wisely in availing itself of such aid, especially for purposes of local investigation and supervision, without which the endeavors of the state in behalf of its youthful wards will prove utterly unsatisfactory. That a certain allowance of police power be delegated to such societies or their officers, though with proper limitations, may be a matter of expediency or even necessity, though my experience and that of others would recommend due precaution against the abuse of such power by over-zealous philanthropists. We know that of all the propensities of the human heart that which must be most carefully kept in bounds to secure the well-being of a people, and especially of a free people, is not the love of gain, nor the love of pleasure, but the love of sway.

And now, ladies and gentlemen, a few more words, and I have finished. I know that there are those among you who are vastly my superiors in the theory and practice of sociology. But, while I crave their considerate indulgence, it is at the same time precisely to them I look for an endorsement of what a quarter of a century of grappling with social problems has

taught me, that the burdens of society cannot be violently thrown off without in some way recoiling upon society, but must be laboriously worked off or reduced by joint exertions judiciously planned and executed, unless they be in some peculiar manner lifted off by the almighty hand of God.

A FEW OF THE VITAL QUESTIONS IN CHILD-SAVING
IN WISCONSIN, WITH SUGGESTIONS FROM
THE WORK IN OTHER STATES.

Mrs. W. F. Allen, Chairman of Committee on Child-Saving.

The mere naming of this section of philanthropic work, indicates a change of views in regard to the work itself. The old title, "Dependent and Delinquent Classes," which was in use only one year ago, indicated reform of existing conditions, the title, "Child-Saving," indicates rather the prevention of such conditions. We are to save the child from those adverse influences that tend to demoralize him and unfit him for good citizenship, a much wiser position than that of reformer after the demoralization has occurred. Our duty is not only to bring improved methods into institutions which are provided for reform or imprisonment, but by our wise dealings with the children who depend upon the state, to render such institutions as far as possible unnecessary. We wish to give the children a fair chance in life, to remove them from unwholesome surroundings, educate them, bring some happiness into the lives of every one of them, and make them feel less like a depressed, marked class. Then above all else, we wish to instill into them what seems to me the essence of all right living, self-control and self-respect. With those two traits they can hold up their heads among their fellows, and without them, there is no hope.

We wish to ask if we are doing all in our power in the child-saving work of our state to foster those two qualities. Take, for instance, the case of a child convicted for the first time of larceny. What is done with him? He may be arrested and placed till the time of his trial, guilty or not guilty, with those already hardened in crime. He comes from his trial, either to be again herded in with criminals worse than himself, in some so-called reform school, or he is free to go out among his fellows with the stain upon his name of suspicion and arrest added to the injury of the lessons he may have learned while incarcerated. The criminal boy finds it easier to make friends with him, the better class shun him and his self-respect is lowered. Unless he is an exceptionally strong character and can withstand this evil influence, his downward path has begun, the greater crime seems easier and more natural to him, and he becomes a member of that class who are at war with all society and consider all law-abiding citizens as natural enemies.

Now, what lesson can Massachusetts teach us in this regard. She has her remedy which has worked well for the past six years, her probation system. It of course is needless to describe this system to a charities convention. But for the benefit of the very few present who may not understand it, I will briefly state that a probation officer is appointed by the justices of each municipal, police or district court, with a stated number of assistants. For instance, five assistant officers may be appointed by the municipal court of Boston, one being a woman. A "house of detention" is provided for those apprehended by the police, where quarters are arranged for each individual, distinct from every other. The probation officer is informed each morning of those placed therein and their offenses. It is then his duty to visit and investigate each separately, and "if the information thus gathered shows the case to be in any degree hopeful, the information is given to the judge with a recommendation for probation." This probation may extend for a series of weeks, either with or without restraint, in their own homes or in institutions where work has been secured for them, or in any situation to which the court agrees. During this time a friendly

oversight is kept up by the probation officer, with visits and counsel several times a week. At the end of this term, the probation may be longer continued, or the person sentenced, or the case dismissed, according to the report of the probation officer, which the judge hears before proceeding to sentence. For further information I refer you to Mass. Probation System, a pamphlet published by Mass. Board of Managers, World's Fair, 1893.

Now what is the advantage of all this? It is not merely red tape, it is a means of saving from the stigma of having been in jail and from the danger of the contaminating influence of other criminals. It changes the first step in wrong to a step toward the right rather than to a downward step toward greater depths of crime. A great many of the lighter first offenses of children, I am convinced, are not committed by radically bad children, but by children whose surroundings or evil companionship have temporarily led astray. This help in time, this probation, as records show, has saved many a child from a downward path. I ardently hope that the time may not be far distant when it will find its way into our Wisconsin system. I am encouraged in that belief by a recommendation for a reformatory for first offenders, which I find in the report of the Board of Control, p. 21. This is good, but not as far reaching and I fear would not prove as efficient as the Massachusetts Probation System. Still it is a step in the right direction and therefore encouraging. I will now turn to another phase of child-saving.

One summer afternoon I was walking by one of our Madison churches. On the steps were seated two boys, eagerly devouring the contents of such a cheap publication as one may see at any time on the news stand, bearing as its title "The Hangman's Own" or "The Thrilling Adventures of the Boy Tramp." As I walked on, I wondered whether any boy ever listened with such absorbing interest to any sermon delivered in that church; and then, as the natural sequence of that thought, could that church with all its best efforts ever undo the evil done by that book to those two boys, not to mention the evil done by myriads of other books to myriads of other boys, all over our land. This was all some years ago, but the thought

has remained with me, and the longer it remains the more I am impressed with the evil of having all this vile literature the easiest of access by the poorer classes. I do not see how we can obliterate this literature. It will be published and sold as long as publishers and authors can make money on it. But I do believe we could make an equally good or a better chance for the good literature, and thus help to crowd out the bad by supplying the good. Indeed during the past four years it is an encouraging sign to find five cent editions of stories by Scott and Dickens and many other good writers whose copy-right has expired. I know much can be said against print and paper, and in the view of "pirated editions" also much can be said. But for my part, I welcome this cheap good literature as a healthful influence. Still, setting this all aside, cheap editions or expensive are, what amount, if any of it, finds its way into the homes of the poorer classes, little, very little, I believe. The homes of the poor are pitifully destitute of means for real home social life and wholesome amusement and interest. Mr. Birtwell of the Children's Aid Society of Boston, has made an exhaustive study of this subject, and tells us in his pamphlet on Home Libraries, p. 5, "The children of the poor are strangely ignorant of the commonest ways of having fun inside one's own home. They do not know the simplest games. Their parents are drudging all day long or are ignorant or negligent and do not think up expedients like other people for entertaining their children." With this thought in his mind, the dreariness of the average home of the poor, he began his so-called "Home Libraries" in Boston in 1886, of which he gave a detailed account in his paper before the State Charities Aid Association of New York in 1893. The whole address, which I have in my hand, is of great interest. I have only time to outline a little of his plan, first by reading a selection from his pamphlet (pp. 1 and 5, marked). This led to the introduction of games and other wholesome amusements, often under the superintendence of the "friendly visitor." This gradually made the home a more interesting place to the children, led to cleanliness and thrift, inculcated saving and led to the general betterment of the neighborhood. We can easily see how one step in this would naturally lead to another.

Better than the curfew law, which doubtless has done much good, but which only brings children in doors after much of the evening has been spent in the streets, is the making home surroundings so enjoyable that the glories of the street amusements pale before them and the child looks upon an evening at home as a luxury to be eagerly sought and appreciated.

In a similar line, introducing good reading into our country home is the traveling library, the new philanthropy, started through the munificence of Senator Stout. The good that such work can accomplish is beyond calculation.

I am glad to know that the power of good reading as a reformatory influence is acknowledged in our Industrial School at Waukesha. Principal Kraege, lately turned out, who introduced the plan about a year ago, says in his paper on "The Use of Libraries in Reformatory Work," read at the Grand Rapids National Conference of Charities, "Boys who never before thought of doing such a thing, may now be seen at intermission, seated in some part of the grounds reading books instead of playing or telling harmful stories or planning to escape." "Every promotion in school gives them a new library and this each time increases their interest in reading." "This makes the boys more contented, more willing and more interested in their work and in their studies." This plan "makes it easy for the teacher to raise the standard of reading as they advance in the grades, and to stimulate, direct and guide the reading of the pupils."

I had intended to touch on other phases of the Industrial School system, and especially on the need of a more thorough industrial training therein, but time forbids and I trust that in the discussions this point will be thoroughly treated.

I also wish to offer as a suggestion for discussion, the fees of sheriffs and such officials as are empowered to procure commitment and transportation of children to the various state institutions. Has the fee any direct influence on the number of children sent? Statistics on this point might be instructive. But I must now turn to my final subject, institutions and homes for the children who are homeless.

In addition to the many private institutions, both Catholic and Protestant, for the care of destitute children, we have

various societies engaged in the work. The Lutheran Home Society has, Feb., 1897, since its incorporation, July 28, 1896, placed 29 children in approved homes. During the probation period the children are visited semi-monthly and sometimes oftener; children bound out by contract are visited monthly and correspondence is carried on with parents and children. During this time 6 children have been removed from homes in which they had been placed. This large percentage of removals may mean injudicious selection of homes, but it also may mean efficient supervision, which is a good sign. The secretary also writes me that they intend to form local boards of supervision and also that they already have, Feb., 1897, on their lists 35 homes applying for children, that have been visited and approved but at present have no children to fill them. Considering the short time the society has been in existence, this is certainly good showing.

The Children's Home Society is of much older growth, incorporated in Wisconsin in 1892, and already operating in twenty states. Up to Jan. 1, 1897, this society had placed, according to its circular, 675 children and had but one request to investigate cruelty, which, quoting from circular, "was based on rumor and had no substantial foundation." (This point contradicted at meeting by Mr. Bogue, a friend of Mr. Andrew Elmore.) "The society requires regular reports from all families receiving children and each child is visited as often as possible, at least once annually." I quote this from a letter of one of the agents of the society. He also writes, "Twice as many homes have asked for children during the past year as there have been children committed to the society." Thus the statistics of both of these societies seem to prove that there are an abundance of homes in Wisconsin ready to welcome *desirable* children.

From the State School at Sparta, a school as we all know merely designed as a clearing house for destitute children, from which they are to be removed as speedily as possible into approved homes, I learn that since the opening of the school in November, 1886, more than 1,600 children have passed through their hands. Of these 950 have been indentured and 54 adopted, leaving at present about 260 in the

school. I believe during the past year, at least, they have out two agents for the securing of homes. These agents visit the indentured children from time to time, and correspondence is carried on between the State School and parents and children. They also transfer children from one home to another till a suitable home has been found. After adoption the superintendence of the state ceases. The superintendent writes me, "As a rule we have more desirable children for placing in private homes than we have applications." Now it seems to me that this difference in the number of homes for children obtainable by the State School and the Home Societies, deserves our consideration. Does it mean that people are less willing to receive a child from an institution than directly from another home, or is there another cause working here? I hope in the discussion some light may be thrown on this condition of things.

It seems to me that the vital point in all this child-placing, is the point of thorough investigation of homes where children are placed and thorough supervision of children after placing, especially during the first years or the years of probation. In regard to the investigation of homes for those desiring really young children, from babyhood upwards to six or seven years, the case is comparatively simple. The probability is that the child is taken for his good and for love and care, and the ability of that home for love and care and support are the prime points of investigation. But when a child reaches the age of helpfulness, another factor comes in, that of self-interest, and great care has to be exercised to prevent the securing of children to be the household drudge without wages. I have a case in mind which occurred some years ago in our own state. A child was taken at the early working age, labored on without schooling or any but the most meager support, till twenty-five years of age. This was in a country community where they were sufficiently isolated to keep her in complete ignorance of her rights, and even if she had known them, she was powerless to assert them, being of feeble intellect and cowed into obedience for long years.

The Children's Aid Society of Boston has worked and writ-

ten much in this line and over their wards they exercise the most careful and constant personal supervision, often extending to correspondence and friendly relations long after they have ceased to be wards of the state. I have received a most interesting pamphlet on this subject, telling of specific cases, from one of the board of ladies who join in this work in Massachusetts. In this way they often have the satisfaction of knowing that some of their most troublesome cases have developed into useful, efficient men and women. The energy of these children was at first misdirected, but that same energy rightly directed was a power to raise them to honorable citizenship. I believe this point of supervision cannot be too much emphasized. I could give illustration after illustration of its workings and its neglect if time permitted. There is much food for thought in the form of a veritable application for a child, quoted in an article on "The Care of Delinquent Children" by the superintendent of the Children's Aid Society of Pennsylvania (Rep. National Charities Convention, 1891), "I desire to adopt a little girl about fifteen years of age. I intend to raise her in the nurture and admonition of the Lord, *therefore* she must be of good disposition and not undersized." The meaning of such an application is not far to seek, and the aid society promptly discards all such. And in this connection let me refer to the interesting and instructive article on "The Working Child," read by Florence Kelley, State Inspector of Factories and Work-shops of Illinois, at the 23d National Conference of Charities at Grand Rapids, Michigan, last summer. It furnishes additional corroboration of the fact, well known in many of our larger cities, that the child must often be protected from the parent. How much more must then these children of adoption or contract need protection. She says, "A large part of the immigrants who come from Russia, Bohemia, Poland and Italy are attracted by the prospect of getting immediate cash returns for the labor of their children." "One reason that these immigrants cling closely to the great cities is, that they find far more opportunity to get money for their children's work." "Of the fathers who escape the due penalty of their intemperance by shelving their parental duty upon the

girls and boys, it can hardly be needful to speak, though we do find, from time to time, a surprising inversion of ideas, by which the child seems to be working because the father drinks, no account being taken of the possibility that the father may drink the more light heartedly because the lad is paying the rent by his work." She closes her paper with this telling paragraph:

"The unmitigated evil of children's work is now recognized by a growing body of physicians. The factory inspectors of every state have joined their testimony to that of the working class, in the demand for the abolition of child labor. A few editors and preachers, chiefly those who have tasted the bitterness of too early toil, are helping along the movement. If the philanthropists can only be induced to join with these in demanding for the children more school life and less toil, the day will be speedily won."

I am sorry to say that I can corroborate Mrs. Kelley's statement in regard to parents shirking the support of the family onto the shoulders of their children, even among the Irish who are notably the warmest hearted people in the world. Years ago, in the cotton mill region of eastern Massachusetts, from which I came, I remember not only instances of Irish families supported in idleness by the begging of their children, but case after case in which my aunt and my mother, aided by the efficient help of good Father Lemon, the Catholic priest, rescued children of school age from the cotton mills and compelled the legal three months schooling which the parents had artfully evaded for the sake of the children's wages. But enough has been said to fully emphasize my point, the necessity of careful, constant and efficient supervision.

Before closing, I wish to refer to the resolution proposed at our last conference by the late Dr. Blaisdell, and passed by a conference vote. "Resolved, That it is the sense of this conference that the committee on dependent children be instructed to get statistics regarding the *undesirable* children, and report upon the question of what shall be done with them." In answer to this resolution, I have written in various directions for information, but all I have been able to

secure has come from Sparta. They write me that in spite of all their precautions for maintaining the school merely for children suitable for adoption, there are at the present time in the institution 30 or 40 children who can probably never be placed in homes as adopted or indentured. They know also of several cases in which children have been rejected as *undesirable*. Still, since the legitimate purpose of the school is well known, many undesirable children would never apply there. The resolution as you see, also wishes a remedy suggested. I would therefore suggest the one which Massachusetts has tried for the past twenty-five years with marked success, the boarding-out system. They procure board for those children for whom they cannot provide by indenture or adoption, with approved families in the country, the rate of board not to exceed \$2.00 per week against \$4.11 which it had cost them to maintain the child in the state school at Monson. (A full report of this work can be found in the Report of State Board of Lunacy and Charity of Mass., for 1894, pp. 62-71.) During the year 1894, the twenty-fifth year of this plan, the state was boarding out 375 children between the ages of three and ten, in well selected and supervised homes. The homes offering to receive children are steadily of a better and better class, and the standing of these boarded children in the community is generally good. This system after all these years of successful operation now prevails so thoroughly in Massachusetts that it has led to the abolition of the state school, and the use of merely a very temporary house of detention near Boston where waifs can be properly cleansed and prepared for the homes where they are immediately placed.

Now I do not mean in the least to imply that our state school should be abolished. I consider that it is doing a good work and that we need it. But I think this boarding system would furnish a most beneficial adjunct of the school, and by ridding it of its surplus children that have become in a measure permanent inmates, would enable it to do its legitimate work much more satisfactorily. Then from still another point of view, that of the children themselves, it might prove an advantage. The institution, even the best managed

one on the cottage plan, can be but an imitation of a home. The child who remains long therein, becomes unused to the ordinary life of the world, and ill-adapted to take his place therein on leaving the institution. The real home life with its daily events, its neighborly or family interests and co-operation and its need of self-reliance, is quite an impossibility for any institution however well conducted. One who has had much to do with the placing out of children, tells me that the child who comes from a poor home thinks the country home, with its abundant though plain living, a luxury, while the child who has been long in an institution and then is transferred to a home, especially a country one, where instead of steam heat and electric lights, he has the wood fire and the kerosene lamp, is often discontented and ill-adapted to his surroundings. It is but human nature that he should feel thus. Of course there are differences of opinion. Be that as it may, I now leave these various subjects for discussion by a number of those who know from practical experience of the workings of the child-saving system of our state.

Prof. F. G. Kraege—Mr. President, Ladies and Gentlemen: It is not my purpose to discuss the ideas presented in the excellent paper that has been read by the chairman of the child-saving committee. In the few minutes that are allowed me for discussion, I can do no more than state a few convictions that I have formed from observation and experience on one phase of this subject that was not presented in the paper, viz., the relation that the work of child-saving bears to the work of our state industrial schools. If I repeat anything that has been said, it is done for the purpose of corroboration and emphasis.

It is infinitely wiser, more important and cheaper to save children than it is to reform them after they have gone astray. Every sane person readily admits that "an ounce of prevention is worth a pound of cure," but there are comparatively few who are willing to take an active part in preventing their neighbor's children from falling. Prevention, repression and reformation are the three fundamental ideas that must underlie all successful efforts to improve the condition of society, and in proportion as any of these elements

are neglected, the whole social system suffers. By establishing and maintaining institutions for the dependent, defective and delinquent classes, our state is doing a great and good work. But the work of these institutions must be regarded as supplementary to that which is done by society itself for the prevention and repression of vice and crime. An examination of the causes that have led to the downfall of more than five hundred boys that have been committed to the state industrial school for boys, has convinced me that society is not doing its share of this important work. I am fully aware of the fact that many church committees and local societies are doing noble work, but my experience has made me painfully aware of the other fact also that society as a whole is not doing what it can do and ought to do to secure such home influences and environment as will give every boy and girl a fair chance of growing up to honest, industrious and intelligent citizenship. At least fifty per cent. of the four thousand one hundred and fifty boys that have been committed to the state industrial school since its establishment, could have been saved from this life-long taint, if society had done its duty toward them. I contend that every person in the community who is blessed with a favorable environment, is under moral obligation to assist the children of his weaker and more unfortunate brother, at least to the extent of creating such a strong public sentiment in favor of elevating the home life to a standard that will insure for every child a fair chance to attain to self-reliant and self-respecting citizenship. The well-being of the community demands that every prospective citizen should be mentally and morally prepared for the responsibilities of self-government. The children that are born amidst unfavorable circumstances have a right to a fair chance in life, their innocence and helplessness speak for them with a force mightier than words. There is an indifference to this matter in some communities and on the part of some persons in every community, that is almost criminal. Public sentiment can exert a mighty influence upon the social conditions in our cities and it is there that such influence is needed most. By ensuring happier and healthier home life for the children of

the poor, much waste material would be converted into a valuable product, many children would be saved from a life of vice and crime, and the vicious and criminal class maintained in our state institutions at tremendous cost would be greatly reduced.

The foregoing would seem to suggest the necessity of child-saving societies, especially in the cities of Wisconsin. It also suggests, to my mind at least, the principal function of such societies. It seems to me that the time has arrived in the history of our state when something *must be done to improve the homes and to enforce parental duties and responsibilities.*

Unless this is done, we are not stopping the source of nearly all of the vice and crime with which society is infested. It is both unwise and cruel to hold young children exclusively responsible to the law for offenses that result from neglect of parental duties. In such cases the parents, and not the children, ought to be responsible to the law. In nearly all cases the training of children even in a poor home is incomparably better than that afforded in the best managed public institutions. Many a vicious or idle parent, who now complacently permits his offspring to be raised in our state institutions at the expense of his hard-working neighbors, would promptly bestir himself if obliged to perform a certain amount of labor to the community, or to pay a certain fine, or to be confined in jail for a time, for the neglect of his natural duties. Such treatment would often secure a lively and wholesome determination to take more efficient care of children.

Child-saving societies can do much toward creating such a public sentiment as will provide every child in the community with a favorable environment. But, in order to be effective, this work must be systematic and the societies must secure the co-operation of the churches and other local societies as well as that of the state institutions. Occasional personal visits to homes that need it most, by officers of these societies and by other friends; occasional lectures and addresses by men and women who are experienced in the work or who are connected with some state institution; occasional sermons from the pulpit or articles in local papers on parental duties and

responsibilities and home making; public libraries and reading rooms, and enforced attendance at school, evening schools and evening trade schools, are some of the means by which a strong public interest may be aroused in this work and by which homes may be improved.

It would require but a slight investigation into the causes which have led to the downfall of the boys and girls that are committed to our industrial schools, to convince any fair-minded person of the necessity of enacting curfew ordinances in our cities. Leaving out of consideration the need of rest, of early sleep, of healthy moral teaching in the home, there is towering over all these the almost certain destruction of pure instincts, the inculcation of vicious, soul-destroying thoughts, where children are allowed unlimited street-roving after dark. Those who are employed in industrial schools know too well how many darkened young life-histories there are that trace the first wrong step to the evil stories and suggestions heard while loitering in the streets between sunset and bed-time. Many young boys and girls have been cast down to life-long misery and shame through the associations formed on the city streets. Since there are so many parents who do not look after their children properly in this respect, and since it is for the public good that this should be done, it would seem as though city councils are fully justified in passing ordinances that would shield the children from the temptations and dangers that are encountered on the city streets at night. If children under a certain age were required to keep off the streets after a certain hour unless accompanied by a parent or some responsible person, the home life would in most instances be greatly improved. Curfew ordinances interfere only with those parents in whom the moral sense is dead and who ignore the duty they owe to the community in which their children must live. Such ordinances aim to suppress the hoodlum element on the city streets and to assist the parents in carrying out their duties and they do this most effectually when their children get beyond home influences. But like all other laws, such ordinances can be enforced and their good effects realized only in proportion to the prevailing sentiment in their favor. This

opens up another large field that requires heroic effort on the part of child-saving societies and all other organizations that are striving to improve the social order. It is a hopeful sign that several of our cities have already adopted such an ordinance and it is encouraging to note that the result has been even more beneficial than was anticipated. Such ordinances will not accomplish everything; but if their adoption and enforcement would save a fair proportion of children from the dangers and vices of the streets, they are worthy of careful consideration and the approval of this conference.

I regret that the time limit will not permit me to enter into an explanation of the plans of some of the curfew ordinances that have been adopted and enforced with excellent results. I hope that at some future meeting, this conference will give this subject such consideration as its importance merits.

SYMPATHY AND REASON IN CHARITABLE WORK.

Prof. E. D. Jones, Economics Dept. University of Wisconsin.

When attention is confined to a single action or to sustained activity for but a brief space of time, the importance of fundamental differences of temperament and point of view, and of theoretical opinions held or rejected, is not always apparent; hence, persons inclined to take a circumscribed outlook upon life are apt to underestimate their actual significance. When, however, longer periods of time are included within the area of vision, such as the duration of one's entire life-work or the complete history of a movement or an institution, the paramount consequence of the fundamental

principle upon which the work of an individual or an institution rests, is easily recognized.

Charity is a field which was cultivated on its practical side, long before it possessed adequate postulates and inferences. On this account the work of charity has severely suffered; and a review of its history gives the student an impression of heterogeneity, not to say of confusion.

One of the undercurrents of confusion, perhaps also of controversy, the result of which has been uncertain policy and lack of harmony, is the failure to formulate the precise relation which exists in charitable work, between sympathy and reason. We are all more or less conscious of a certain antagonism between these two mental states or processes. The charity organization societies have been severely criticised, as cold and mechanical, by those who regard their methods as characterized by too much theory and too little pity. On the other hand, charitable enterprises of all sorts have, until recently, been measurably shunned by business men, who have looked upon them as "petticoat" affairs.

This antagonism, so far as it affects the attitude of charity workers towards each other, is not so much an opposition between different mental faculties as it is between dissimilar temperaments, or between types of character. The most prominent representatives of the class which lays undue emphasis upon reason, are the political economists of the past generation. In their own proper sphere they over-magnified the principle of free competition, and, by repressing the element of sympathy, permitted inhumane conditions to exist unrebuked in the factories and mines. Where their influence extended to fields in which it was tempered by sympathy they accomplished much good, as in the case of their revision of the English poor law.

The sympathy of that period found its most illustrious expression in those philanthropists who, although they failed with the poor law, triumphed by infusing humanitarian considerations into the industrial system of their day. The point may here be made that embodied sympathy and reason fail when separated from one another. Their harmony is shown by the good results of a close union between them

and their equal representation in policy and action, and by the failures which ensue from their divorce in practice.

Scarcely less distinct, in the rank and file of that generation, were the less eminent representatives of the two tendencies under consideration. The *personnel* of the local charitable societies usually included many members of rather weak nature, whose chief trait was a sort of negative, placid benevolence, whose good health and lack of insight rendered them optimistic, and whose temper was one of constant serenity, because they scarcely possessed the capacity to feel indignant, no matter how great the wrong. These excellent people interpreted patience to mean simple endurance of persons and classes out of place, not the endurance necessary to carry out an efficient programme of reform. The latter is the only patience which is a virtue. The service which they rendered was to furnish to early charity a sort of insipid sympathy. The element of reason was represented by a group of self-made men who loved discussion, because it afforded a chance for reminiscence and self-glorification, and who indulged in long exhortations, which were, in effect, accounts of the deprivations they had suffered in early life and yet achieved success. The gist of their talk was, "Take me as a model." It led to incessant personal jealousies and bickerings.

At this time, charity is attracting to itself refined sympathy, and as good brains as law, medicine, or theology. Men of the highest intelligence and energy feel that a noble calling has added to the traditional ones, and the flow of able men into this current of activity is already noticeable in the improved character of every part of the work. But we have as yet formulated little consistent philanthropic theory, and the old division between two opposing types of philosophy and art remains. We are confronted on the one hand by fanciful speculation, and on the other by sentimentalism or false sympathy for what is in fact a fad.

The difficulty encountered in any attempt to adjust sympathy and reason to each other is real, not imaginary. The two are, in many respects, distinct. Their union is largely a question of proportion. Aside from these differences, how-

ever, there are certain common grounds to be taken, with reference to them both, which may aid us to overcome the difficulty in question. At least it is worth our while to make the attempt.

First: In the first place, there is far more harmony between sympathy and reason in their highest manifestations than we may be led to suppose, if we confuse real sympathy (which is sufficient to accomplish its function) with imperfect sympathy, or if we fail to discriminate reason from unreason. It is only as we advance toward perfection, in any field, that we discover the universal tendency in Nature toward harmony of interest and aim.

Second: This harmony can be demonstrated by an examination of some of the constituent elements of sympathy. The two chief prerequisites of sympathy, by which it is modified in its manifestations, are experience and imagination.

The experience of those who have passed through suffering enables them vividly to realize the sufferings of others; hence it leads to brotherly assistance. The attitude of the man of wide experience is prevailingly that of sympathy. Cervantes is said to have had a singularly varied life, having been a soldier, seaman, Algerine slave, man of business, poet, and writer of prose. Speaking of Don Quixote and its great author, Mr. W. Webster says: "It is, perhaps, to this many-sidedness of his experience and his culture that is owing the genial character, the pathetic humor, and the total absence of bitterness in this masterly satire. Thus Cervantes, while laughing down and extinguishing forever the absurdities of the chivalrous and pastoral romances, yet retains his sympathy for all that was really noble, though exaggerated, in them."* Experience imparts a sympathetic quality to all one's thinking. "For we have not an high priest which can not be touched with the feelings of our infirmities, but was in all points tempted like as we are, yet without sin." The manifestation of sympathy proceeds from unconscious strength, for it is only one poverty-stricken in his resources, who concludes that he can distinguish himself above his fellows by detracting from their merits. The consciousness of

*"Spain," pp. 218, 219.

inadequate spiritual power dictates the calculating policy of distributing sympathy and interest where they will most quickly and surely lead to one's personal advancement.

The other principal basis of sympathy is imagination, which enables us to picture to ourselves the condition of others and its meaning—to put ourselves in the place of others. Women excel in this, hence they show a quick and constant compassionate perception of human suffering. Puritan culture undervalued the imagination, through a misunderstanding of its function, and so deprived the age influenced by it of much its natural tenderness. Puritanism facilitated the operation of the law of the survival of the fittest in society, and dictated a policy which was effective with certain classes of dependents, while unnecessarily harsh with others. Witness the essential brutality of the treatment accorded to Hester Prynne in Hawthorne's "Scarlet Letter."

That perspective view of the relative importance of human interests which is known as materialism, is lacking in imagination, for in it physics crowds ethics into the background, and attention is concentrated on that which is ponderable. An age which is materialistic, in the sense that it is unduly given over to the accumulation of wealth, discounts the products of the imagination—art, literature, society (in the true sense), philanthropy, and religion. It rather dignifies science, invention, business on a large scale, display in the place of society, aristocratic paternalism in the place of philanthropy, luxury in the place of religion. For the effect of materialism upon sympathy, witness again the dreary deadness of the social life depicted in Howe's "Story of a Country Town."

Protestantism, in so far as it unduly cultivates individualism, is inferior to Catholicism in the stimulus it gives to the imagination, and since its moral standard is less objective and social than that of its rival form of faith, it develops less of sympathy in general social intercourse. The Jews and the Roman Catholics to-day excel in caring for their poor. Races differ much in the strength of the imaginative faculty, and in any comparison between races in this regard we find the Jewish race pre-eminent.

In so far as we neglect the imagination, we injure ourselves

for all forms of work in social fields. If we neglect those activities which are social and communicative in their nature, we become incapable of contributing our share toward the maintenance of a highly developed and efficient social organism.

If experience and imagination are thus seen to be necessary prerequisites for a high degree of sympathy, it takes but a moment to see also that they are equally necessary for the proper exercise of the reasoning faculty, if not more so. The judgment looks to experience and imagination for its data. Two things can not be antagonistic, which spring so largely from the same roots.

Third: Another important observation is that, when we examine the reason through its highest products, we find it sympathetic. It is a commonplace of experience, that petty dignitaries are officious and curt, while men of great ability are usually sympathetic and approachable. Edward von Hartmann, the celebrated German philosopher, in his essay on fame, explodes the popular error that great intellectual power is incompatible with sympathy, and says: "Men can with difficulty imagine that one who has merited fame can still be a man, and, in a higher degree than others, one to whom nothing human is strange, and in whom, therefore, all human interests are bound to find a sympathetic echo."*

Reason justifies in the fullest sense the exercise of sympathy. What man enjoys that is more than savagery is due to society. It is reasonable, therefore, that man should oppose and seek effectually to remove all that threatens the life of society. Any neglected class of incompetents or anti-social persons constitutes a menace to society. Reason therefore dictates that, if it is within the bounds of possibility, every anti-social class shall be so dealt with as to restore its members to society, and that steps shall be taken to prevent the re-appearance of the class. Altruism is merely the reasonable and proper recognition of the social element in progress. Life on a low plane can be lived individually, on a high plane only altruistically. It is sometimes said, in reply to this asser-

*"The Sexes Compared, and Other Essays," London, 1895, p. 137.

tion, that to live an altruistic life involves self-sacrifice. If by sacrifice is meant waste, this is not true. Altruism sacrifices a lower to a higher good, when the two are found to be incompatible.

Fourth: The history of charitable effort affords us an encouraging argument, because it shows that in practice there is a harmony between sympathy and reason. Abuses have crept in, only when one of the two has been neglected, or either of them separated from the other. This is illustrated by the relation of the English philanthropists and political economists of the last generation, to which reference has already been made.

Sympathy moved the world to charity, before reason. The Church early took upon itself the function of awakening the altruistic impulses necessary to hold society together. It had such a struggle, to bring these to effectiveness in other than the narrowest social life, that it neglected by comparison the problem of directing the impulses aroused. We discover many evidences that charity suffered long from a lack of directive power. In the management of endowed charities, in the operation of the English poor law prior to 1843, in the experience of the American relief and aid societies, and in numerous other ways, this is shown.

At present we are trying to put upon our useful impulses the harness of reason, not so much with the intention of checking them, as of directing them in the interests of humanity. It is gratifying to be able to trace, in the recent history of charitable institutions, the harmonious connection between the personal charity which is usually regarded as sympathetic *par excellence*, and those institutions which perhaps best illustrate the function of reason. Under the patronage of the charity organization society (which more than any other organization emphasizes system), we find the friendly visitor becoming a definite force. From the centers of collegiate learning, both in England and in this country, we see going forth as colonies the university or social settlements, the dominant method of which is personal association.

Fifth: A movement is rapidly becoming a distinguishing feature of present-day charity, which affords us the best

possible vantage ground from which to harmonize the operations of sympathy and reason. This movement is toward the development of character through personal association and influence. Our charity has in the past moved us chiefly to supply physical needs. It has not equally moved us to see to it that the proper conditions for the development of character were guaranteed to all classes in society. For the word "charity," in the authorized version of the New Testament, the new version has substituted "love." This change is significant. The old charity was interpreted to mean alms, but the new means association and fellowship. The limitation of charity to material benefits reveals a poverty of love. Inter-course between the rich and the poor has too often had the sole purpose of conveying physical comforts in order to prevent a neighborhood scandal, on account of exposure, untended sickness, or starvation. Our standard has been so low, that suffering must reach a pass of profound intensity, in which one of its manifestations is dire physical need, before there has been a response in the community. And it has moreover, been assumed that physical need was the only want which demanded attention. The motto, "not alms, but a friend," means that the philanthropic standard must be raised, until the intellectual and spiritual needs of the deficient shall be so supplied, that much of the present physical suffering will not occur. To satisfy these higher needs, requires the contact of personality with personality. In charity, through association, love and knowledge are fully blended in an individual character.

In the development of character (which in the future will be increasingly our problem), the mutual relation of sympathy and reason presents itself as a question for solution. But here we are on ground familiar to the teacher and parent, and from their experience principles can be educed, which are applicable to the problems of charity.

The not uncommon conviction, strong enough materially to affect charitable policies, that an antithesis exists between love and the infliction of pain, ignores the important social function of the sense of want. A charity that merely includes want-satisfaction, without undertaking the equally

necessary task of want-creation (if it be no more than to create a demand for justice), is deformed, and therefore can produce only defective social conditions. The most helpless of the human race are said to be those savage tribes, for whom nature has so bountifully provided, that they have not been impelled to industry by the pressure of distinctly felt wants. The doles and unwise charities of civilized societies have sometimes done for their recipients what nature has done for these savage tribes. Charity should seek to awaken in the pauper discontent with his aimless, dependent mode of life. The most lasting benefit which can be conferred upon any member of the dependent class, is to impart to him the personal qualities which insure success in life, rather than the material reward of success without the corresponding character. In the process of his development, we can not afford to ignore the function of pain, which the all-wise Creator has seen fit to intrust with so prominent a rôle and function in the constitution and government of the world. Those who think that love and the infliction of pain are antithetical, perhaps forget the deep harmony of love and pain expressed in the saying, "Whom the Lord loveth, he chasteneth." To do the best for a child, is often to inflict upon him temporary pain or to cause him a rational and salutary disappointment. To act the part of a true friend, often means to pass upon him a painful criticism. "All beginnings are hard," is a German proverb, but it is better to shape every beginning in a way calculated to lead to the greatest ultimate happiness in life. If any man joins with others in a league to nullify or temporarily to suspend the operation of that fundamental law of the universe, "The way of the transgressor is hard," he is, if he but knew it, in very bad company and enlisted in a very bad cause. Knowing, as we now do, the close connection which subsists between pauperism and crime, it is strange that, in case of crime, we should so over-emphasize the value of certain forms of discipline; and, in that of pauperism, still so generally neglect the application and enforcement of disciplinary measures.

Sixth: Finally, we shall perhaps most surely sink out of sight our disagreements, if we can but attain to a competent

realization of our deep need, both of a more active and efficient sympathy, and of a broader, clearer mental vision, in order to discharge aright the vast social duties now opening before us.

The increasing importance of the rôle assigned to the intellect, in the conscious evolution of humanity as a whole, is apparent from a consideration of the increasing complication and difficulty of all social problems. The growing complexity and delicacy of social organization forever add to the weight of the burden which it imposes upon the human intellect. If interest is once awakened in charitable work, a hundred avenues of causal connection lead it irresistibly toward the study of economic problems. Wage-earners, as a rule, object to our present private philanthropies, on the ground that they direct attention exclusively to conditions and effects, and fail sufficiently to appreciate the importance of the great struggle with causes. If we start in with the study of an individual, the principle of social solidarity soon brings us face to face with the question of the social order, the spirit of the age, and its ruling customs.

If we begin at one extreme of the social scale, and study poverty, we find in time that many of the causes which engender it, have their roots in the great fortunes at the other end of this scale. To isolate any social question and examine it apart from its relations to the social question as a whole, is clearly impossible. As in natural, so in social science, it seems to be necessary to begin everywhere first; to know everything, in order to know anything well. Such is the solidarity of knowledge in general, and of this subject in particular, that, to follow the ramifications of poverty, one needs to be trained in all the social sciences.

The purely literary tasks laid upon social reformers by the attention now paid to the social sciences are continually increasing in amount. These sciences, in their various aspects, are the object of the most enterprising investigation, and a flood of literature relating to them is annually poured out. The conscience of the social physician demands that he shall conduct his experiments and operations in the light of this increasing body of knowledge. Already, one who will be

well grounded in philanthropy finds the work of thorough preparation so difficult as to endanger his health, before real competency to form an opinion is attained. To make requisite progress, so great a concentration of time and energy is necessary, that few come through the ordeal without being severely narrowed in the scope of their knowledge and interests. While the amount of our knowledge of society must steadily increase in the future, it will nevertheless become, perhaps easier to handle. The transitional period through which we are passing demands more discretion than a future epoch will require, for as yet the social sciences are but sketchy and ill co-ordinated. One voice, in the name of science, calls us in one direction, and another in another. The unwary are led astray by the allurements held out by pretended panaceas, in a way which future students, possessing a well organized body of information, will be unable to comprehend.

If, no longer extending our attention to the entire field of social organization and reform, but confining it to the special region of charity, we direct our energies to an effort to see and understand what is involved in that, we shall still find our intelligence severely taxed. The evolution of the factory system, to which is due the overgrowth of large cities, in which are massed great numbers of working men, who are deprived of the intimate relations with other classes which existed in the age of handwork and dominant agriculture, has necessitated the creation of charitable machinery on a scale before unknown. Charity, like municipal government, has failed to cope with existing conditions. For this reason, just as certain men have despised politics and withdrawn themselves from active participation in it, so other men have despised the ineffectual efforts made to relieve the suffering occasioned by the conditions of modern city life. On both these topics the signs of a hopeful awakening multiply before our vision. The alteration which has taken place in modes of transportation has had the effect to create a recognized relation between the condition of the local almshouse, jail, or woodyard, or stone pile, and the distribution of tramps over wide areas, extending for thousands of miles.

We need to learn how to control our charitable impulses and activities, so as to secure the best results in the long run, as well as at the moment. We must remember that what we do affects the entire class to which an individual belongs, as well as the individual himself. It is both unwise and unkind so to treat an applicant for aid of any sort as to encourage him to resign himself to a state of permanent pauperism, or to attract to the same form of life a dozen others of his acquaintances and associates.

Charity is no longer a field to be occupied only by women, nor is it to be regarded as a mere episode of life and not a vocation. Young men of the highest capacity and education are now needed to fill important positions in the government of our larger cities, including those of middle size, where officials weekly pass upon hundreds of cases, handle thousands of dollars every year, and supervise the operations of a charitable machinery of greater importance to the welfare of the community than that of a large industrial plant. In the application of the new charity, great wisdom is demanded. There is much significance in the scriptural declaration: "Blessed is he that *considereth* the poor." We can not thoughtlessly do good in charitable work, any more than we can without thought multiply and divide. There are social laws, just as truly as there are mathematical laws, and Providence does not make allowance for our ignorance of these laws, but attaches a penalty of suffering to every mistake.

On the other hand, if we need more reason in charitable work, we also need more sympathy. As our tasks become more difficult, it requires a stronger impulse to brace us up to them and carry us through them. If we analyze the thought in the familiar sentence, "Good intentions are not enough," we shall find it to be that hastily conceived and imperfectly executed intentions, no matter what their moral quality may be, do not insure satisfactory results. No impulse is adequate, which is insufficient to carry the student through the preliminary work of inquiry and reflection necessary, in order to understand how to secure a desired result, and which will not then drive him through to the completion of the work undertaken. The exercise of half competent

forces in social regeneration is analogous to the extravagant policy sometimes pursued by the Federal Government, in half completing architectural structures and leaving them exposed to the weather, in an unfinished state and without roofs.

Again, as we advance to a more complex stage of social evolution, we need a lively sympathy to prevent us from thinking of our problem as a mere grouping of impersonal "social forces," and to help us to find the human heart at the center of the machinery of society.

Since organization compels a greater subdivision of labor, sympathy is necessary, in order to prevent us from falling a prey to the monotony of routine and from degenerating into mere social mechanics. We need sympathy, too, to protect us against the estrangement of widely separated social classes.

If the social and industrial life of the United States is at present such as to give most of us a taste of life's various experiences, of poverty as well as of comfort, that fact will show itself in general and sympathetic response to calls for help. But if there are classes growing up among us, which know nothing but wealth, or nothing but poverty, it will be most difficult to maintain sympathetic relations between such classes. Uniform luxury and idleness are to be dreaded, for they furnish one with no experience with which to interpret to oneself the pathos and anguish of poverty. The progeny of such an environment may be surely expected to withdraw from the path of social duty, perhaps even to shake the dust of their native land from their feet, and declare, in the light of their imperfect conception of the attributes of a gentleman, that "This country is no fit place for a gentleman to live."

Even the segregation of social classes in different quarters of our large cities, with no neighborhood life in common, suggests the necessity for a conspicuous impulse of fellow-feeling, to unite them again over the intervening space. In the same way that geographical separation acts, so do differences of education, of material equipment, of pleasures and interests and fears, divide the unlike from each other, and render difficult the passage back and forth between them of mutual affection. It is sufficient to call attention to the fact

that class building and the drawing of class lines have a tendency to hedge in the lives of those included within such lines, to render their experience partial and incomplete, and to disqualify them for dealing helpfully with problems relating to the general well-being of society. The upper and the lower orders thus become incapacitated for realizing each other, and they combine to throw the burden of holding society together upon the middle class. The evident sharpening of class lines in our modern industrial society is for many reasons to be deplored by philanthropists.

More than all else, in charitable work, we need a sympathy which will make us realize the intellectual and spiritual wants, as well as the material necessities, of the unfortunate.

SOME RELATIONS BETWEEN THE STATE AND ITS SCHOOLS FOR THE DEAF AND BLIND.

Mrs. J. W. Stearns, Chairman of Committee on Education of
the Deaf and Blind.

It is not my purpose at this time, to present a report on the Wisconsin state schools for the deaf and blind, this duty falling more naturally upon those who are officially connected with them, and who know the details of their work. Moreover, a thesis has been formulated which the committee on the education of the deaf and blind have hoped might be discussed at this conference.

This paper then, is mainly by way of suggestion. Perhaps a glimpse, such as one not in any wise connected with the

institutions, may get, may not be altogether useless; I shall then, taking advantage of the liberty so kindly afforded me, refer very briefly to some impressions received from a visit of a few hours each in the institutions at Delavan and Janesville. A very short time spent in the class room with either blind or deaf children is sufficient to convince one that they are more eager to acquire knowledge and more absorbed in the lessons than are seeing and hearing children of the same grades in our public schools. These characteristics are most marked in rooms where lip-reading and speech are taught to the deaf. In this eagerness there is certainly an assurance that these children though laboring under such great disabilities have active and sane minds which require only patience, time and skill to thoroughly awaken and develop. One can observe, moreover, that there are very few in either of these schools who appear to have serious mental defects. When such exist, it is plain that the persons having them should be sent to the institutions which the state has provided for their care, inasmuch as those we are now considering are emphatically schools and not asylums for the feeble-minded. That with their ordinary school work, instruction in the industrial and domestic arts is also given, should not in the least affect their classification as schools. This seems especially true, now that manual training is coming more and more to be regarded as a legitimate part of the work of our public schools.

That such training is of particular value to the deaf and blind is evident, and the opinion that these children must be trained to become independent and self-supporting as well as happy, and that in itself is much, is now fortunately well established. Certainly the work done by these children is remarkable when all the conditions are taken into account. With the deaf, this manual training has possibly some encouragements which are lacking in similar efforts for the blind, the training of the latter to self-support seeming, at least to the uninitiated, a far more difficult problem. Yet reports from these schools give results which show that its solution is not only being diligently wrought out, but that it is also in large part attained. If, however, to the sceptic it has not

yet been thoroughly demonstrated that by this training the blind can be made altogether self-supporting and independent, at least its value on the educational side is undoubted. Dr. Anagnoes, director of the Perkins Institution and Massachusetts School for the Blind, emphasizes this when he says, referring to the kind of training given in that school, "The to have an educational value for the blind, which is unsur-Sloyd method continues to be the principal system of manual training pursued in this institution and experience shows it passed."

One other matter which may not be over-looked and which at once impresses a visitor, is the great importance of early oral training for the deaf, and a correspondingly early awakening of the blind. It surely seems wise to begin teaching the deaf or blind child at the period when Nature herself, is yearning towards expression and when the desire to imitate others is strongest, even with the normal class. I find in the report of the Massachusetts Board of Education, when referring to the "Sarah Fuller home for little children who cannot hear," these very pertinent paragraphs:

"But best of all the results it is demonstrated that children thus early taught gain more skill and knowledge and acquire them more easily than those who begin in later childhood. When this fact is widely known, homes like this will multiply in the land and the present disadvantages for the deaf will lessen to a degree."

Miss Clark, the principal of this school, gives a most interesting illustration of the success attained with a very young child. She says: "Raymond Bonvie, a bright, wide-awake little fellow of two and one-half years, who came to us six months ago is making excellent progress and is rapidly acquiring a vocabulary of spoken words. He says, 'arm,' 'thumb,' 'home,' 'papa,' 'up,' 'ball,' very nicely; also many words imperfectly but which are readily understood by those about him. He distinguishes color and form easily and draws very good lines from a copy, One of his greatest delights is to go into a school room with the other children. He insists on doing everything they do, even to writing the names of the different objects, considering it an unpardon-

able slight if anything is omitted." Similar assurance, as to the value of this early training for the blind comes to us from the Perkins Institution. In regard to the children who were transferred from the kindergarten to the parent school at South Boston, the report says: "This is the second class which has entered the institution proper with the preparation of a full and complete course of kindergarten training. In the case of these children as in that of those who were transferred a year ago, the value and usefulness of the infant school is again shown. Quick and ready intelligence in grasping subjects of thought combined with an eager desire for investigation, marks the intellectual difference between these children and those who enter the institution totally untrained." With an abundance of such testimony we are certainly justified in laying great stress upon the necessity for more kindergarten work in our own institutions.

It is obvious that this state pursued a wise and generous policy in so early in its history providing for the care and instruction of its deaf and blind. Neither can it be doubted that it has striven to keep in touch with the best methods which have been developed in this field. It has even led in some very important measures. Within a little more than the past decade an entirely new departure has been made in Wisconsin, in the education of the deaf. In 1885 the first public day-school for the deaf under an act of the legislature giving state aid, was opened in the city of Milwaukee. This innovation was then regarded by many as, at best, a doubtful experiment. To-day there are ten such schools in actual operation in different parts of our state, and as far as can be known, most, if not all, are justifying the faith of their founders and promoters. Such schools have now come to be recognized as necessities in our cities. Valuable and desirable as these schools are, they can hardly be considered practicable in country districts and small towns, and therefore do not in any way interfere with our large institution at Delavan. The latter is in fact a boarding school.

The public day-schools appear, however, to have a certain and pronounced advantage over those of the institutions, in that they are taken out of the class of charities and are put

upon a basis similar to that of other public schools. That the pupils in the schools at Delavan and Janesville should be classed with paupers, is fatal to their self-respect: that they should be considered in the same category with criminals, may go far towards making them subjects for our reformatories.

This classification of the deaf and blind with those who are to be permanently cared for by the state has been regarded by many, as so grave an error, that the following question has been proposed for consideration at this time, "How can our schools for the deaf and the blind be so associated with our public school system, as to remove the unfortunate impression resulting from their present close association with our asylums and penal institutions?" The importance of this question will be readily perceived though there may exist great diversity of views in regard to it. Those most directly concerned with educational affairs, either as officers, teachers or members of boards are recognizing the unfortunate results of the old classification. In a few states this sentiment has been strong enough to bring about a removal of these schools from their former control and to place them in direct relation with the state educational system. Massachusetts, New York and New Jersey may be mentioned as having effected such a change. In order to obtain information upon this subject, letters have been sent to several officers of schools for the deaf and the blind and to other persons prominently connected with them. Many answers have been received, far the larger number of them being pronounced in the opinion that such a change should be brought about.

Among those who are now working under this comparatively new order of things and who most unequivocally advocate the system are a prominent superintendent of an institution for the blind in New York city and a superintendent of a school for the deaf in Trenton, New Jersey. From the latter we have this statement, "Great advantages have come to the schools during their five years' connection with the public school system." Dr. E. M. Gallandet of Washington, D. C., a high authority, says emphatically, "These schools should be looked upon as purely educational establishments."

Coming nearer home, the superintendent of a Michigan school for the deaf makes this suggestion in regard to these schools, "Remove them from the care of any board whose duties are largely and as far as the general public know, almost exclusively with criminals and paupers and place them where they belong, under a board whose duties are to care for and supervise educational institutions," and he adds, "While the public constantly reads that a board or a member of a board has just visited the state prison, the insane asylum, the reform school, the house of correction, the blind school and the school for the deaf, these different institutions will be classed together."

The letters received from Ohio, Indiana and California echo these views. Some of those replying to inquiries, seem to be so deeply impressed with the difficulty of bringing about such a change that no decided opinions are expressed in its favor. A very few are pronounced in their judgment against any connection with the public school system. From no other one has come a more energetic plea for this connection, than from Superintendent W. B. Waite of the New York institution for the blind. "The fact," he writes, "that the conditions which attend the education of the deaf and the blind differ from those which attend the education of normal children, constitutes no reason for classification with paupers, criminals, etc. The support or clothing which may be furnished to those pupils during their attendance at school, is merely an incident and does not differ in substance from the shelter, fuel and other material supplies which are furnished for the comfort and welfare of other children while receiving an education."

The first step has perhaps been taken towards the removal of our schools from the ranks of asylums and reformatories, in the substitution of the word school for asylum. It is to be feared, however, that this has really had little effect in changing public sentiment concerning them. In one of our states where an institution for the deaf has been in successful operation for many years, and which was christened a *school* when established, a street around the premises was laid out by the town authorities and was named Asylum St. This was

fifty years ago, and the street still bears the name and stamps the institution as an asylum despite the insistence of all connected with it, that it is a school. It seems evident that so long as these schools for the deaf and the blind are connected in the minds of the people with state boards of charities, in annual conference, just so long will they continue to be associated with asylums and penal institutions.

The question why unfortunate or dangerous conditions exist is often more easily answered than the question how these conditions can be changed or removed, so the difficulties of our present thesis arise out of the question, how can our schools for the deaf and blind be removed from their present associations and be made a part of our public school system? As is well known, state boards of education, whose duties include the supervision of such schools as we are considering, have been organized in some of our states. In Massachusetts, reliable testimony goes to prove that this plan has been successful. Again others advocate a special board for schools for the deaf and blind, thus placing them on the same basis as our State University and the state normal schools. Still another plan is to make the state superintendent of public instruction, with an assistant who must be an expert in the education of deaf and blind children, responsible for these schools. None of these are new suggestions, as most of those present are aware. Against them all may be urged that as these schools are under control of the legislature and as such must receive the appropriation necessary to their support from that body, therefore the board appointed to control other institutions under like conditions, is the only and proper one to have supervision of such schools. Is it not true that our University and Normal Schools are under exactly such conditions? Moreover the state superintendent now has supervision over one portion of our schools for the deaf. Why should the state system of education thus be cut in the middle? In connection with this question, it may be pardoned if I quote once more from Mr. Waite, "The purpose stated, can be accomplished by recognizing the education of deaf mutes and the blind as being what it in fact is, a part of the general *educational* policy and sytem of the state, and not a work of reformation and

charity. If these schools have been classified with poor-houses, hospitals, asylums and reformatories, by statute, then the proper and the only method would be to transfer them by statute and make them a part of the educational system of the state, subject, alone, to the supervision, inspection and control of the superintendent of public instruction or of such authorities as have the supervision and control of the other *educational* establishments of the state."

It is evident that to all these plans and suggestions there may be serious objections. It is hoped that by a free discussion of all and various methods, something valuable, from a practical standpoint may be accomplished at this conference.

THE MEDICO-LEGAL BEARINGS OF THE COMMIT-
MENT OF THE INSANE, AND THE PROPOSED
AMENDMENTS TO OUR LAW.

By W. F. Becker, M. D., of Milwaukee, Wis.

Chairman Joint Committees State Medical and Milwaukee Bar Association on Revision of Insanity Law.

Just as there are disorders of the physical body which do not fall into the prescribed nosological formulæ, so there are disorders of the social body which the law, inflexible and formal as it must be, cannot easily compass. Wherever law bears upon insanity it meets with this difficulty. Accustomed to dealing with a certain definite material, man, with definite relations and reactions, it finds here an anomalous material with anomalous relations and reactions. Medicine, however, claiming this anomaly for its own, would exercise a wide jurisdiction over it and thus there has easily come about the conflict of the medical and legal bearings of insanity. As it is at many other points where law and insanity touch, so this conflict has not been wanting, in the matter of the commitment of the insane.

The doctors, regarding insanity as a disease which has the deprivation of liberty (commitment) as only an incident of its treatment, have sat very uneasily under the rigorous judicial process which the lawyer, on the other hand, keen only to the deprivation of liberty involved, would cast in the way of the commitment (treatment) of the insane. Each viewing the matter from his own standpoint would, in statutory expression, violate principles dear to the other, neither appreciating sufficiently that the subject cannot have a purely legal nor a purely medical treatment, but that it is a matter for compromise,—a medico-legal subject

and that the doctor cannot under our constitution (however much he may desire to follow the happier methods of other countries) have the commitment of the insane wholly in his own hands, nor the lawyer uncompromisingly deal with the matter on the same ground as in the criminal process.

The marks of this controversy swell state reports and are in easy evidence in the changing history of statutes. Our own state has lately had its turn.

The Wisconsin statute on the commitment of the insane has been for many years substantially as follows: Any "respectable citizen" may make application to the judge for the examination of the mental condition of a person supposed to be insane and for an order committing him to some insane institution. Such application shall specify whether or not a jury trial of the question of insanity is desired by the *applicant*. The judge thereupon appoints two disinterested physicians to make such examination and report the result to him. Upon receiving such report if no jury trial has been demanded, the judge may order the commitment of the patient or if not fully satisfied he may make any additional investigation of the case as may seem to him to be necessary and proper, and at any stage of the proceedings before commitment, the patient or any friend acting for him may secure a jury trial of the question. After commitment any person acting in behalf of the patient can secure a rehearing of the question of sanity and a jury trial.

This statute was declared unconstitutional by the circuit court of Milwaukee county in 1894. Thereupon the judges of the county refused to make commitments, violent patients were kept at large or at home, jeopardizing life and property, or if arrested, the police, doubting the legality, were timid in detaining them. As the criminal avenue to commitment was still open (under the common law and also by virtue of another statute unimpugned by the decision of the court) we were compelled to resort to the reprehensible practice of arresting patients on slender grounds in order to accomplish their commitment through the criminal

court.¹ Fortunately the state generally, where the judges were not influenced by the decision of a lower court, did not suffer thus. An attempt made to carry a test case to the supreme court was abandoned after the law had again been declared unconstitutional by a court commissioner.

The validity of this law was attacked on the ground that it failed to provide *notice* to the alleged insane person of a *right to a hearing* or jury trial, this matter being left to the discretion of the person making the application, that the person was thereby being deprived of his liberty without "due process of law," in violation of the 14th amendment of the constitution and that the proceedings were thus largely *ex parte* and the citizen not sufficiently safe-guarded from easy commitment to an insane institution.

This question of notice and of hearing or trials of the alleged insane, has been the heart of much controversy. It is the rock on which the medical and legal opinions split. The law looking on the insane with the presumption of *sanity* until *insanity* is proven, properly holds that he should not be deprived of his liberty without hearing, that he is entitled to his "day in court." The doctor on the other hand regarding the diagnosis of insanity in *his* province, and if already recognizing his patient to be insane and to be benefited by such deprivation of liberty, cannot regard a notice of proceedings to determine his insanity *other* than unnecessary. But were it *only* unnecessary, the matter could easily be remedied. It happens however that such proceedings are in addition so offensive to the welfare of his patient that he is in duty bound to oppose them.

A notice to an insane person that he may have a trial before being sent to an asylum, adds a severe and often brutal shock to an already overstrained mind, and may lead him to flight, violence or suicide. However benificent its application to the normal mind may be, to the suspicious mind of the insane it easily implies that some wrong

¹In the year before the decision commitments through the criminal courts was 32 per cent. of the whole number. This increased to 64 per cent. during the year after.

is about to be done to him to save him from which the great majesty of justice invites him to defense. The temptation to take advantage of such offer must be will nigh irresistible.

The trials (by jury or otherwise) to which such notice thus encourages the way, are most pernicious to a large number of the insane. They agitate the disordered mind, they produce delays at the only stage of this dread disease when prompt treatment offers much hope, they foster the very common delusions of persecution, by placing the patient in a criminal atmosphere in which his deluded mind easily finds such semblance to a *real* persecution, as to fix the delusion which he may have entertained with some reservation theretofore.² In short it may make an irrecoverable out of a recoverable case if insanity. Unfortunately too the largest advantage of these trials is taken by the very persons in whom their evil (both public and private) is most pronounced, a plausible class in whom there is little or no intellectual derangement and yet who are among the most dangerous insane.

In law the question of notice to the alleged insane of a right to a hearing has had varying treatment. Some of the statutes provide for notice, others do not. Decisions also as to the right of notice have been *pro*³ and *con*.⁴ In those states where no notice is given a traverse of the proceeding is usually allowed, following the practice of England. In some states where it is provided that the insane *must* be brought into court no notice is required. Usually it is held that notice must be served upon the alleged insane person *himself*⁵ and while most statutes in

² During the twelve years of compulsory jury trial in Illinois it was not uncommon for patients years after their commitment, to entertain the not unnatural grievance that they had been innocently "sentenced."

³ In re Blewitt, 131 N. Y., 541.

⁴ 80 Iowa, 316, Chauvannes v. Priestly.

⁵ Morton v. Simmes, 64 Ga., 298.

Chase v. Pellerin, 16 La., 63.

In re Pettit, 2 Paige, N. Y., 174.

which notice is provided, so order, it is also a common provision that they be served upon others in addition to, or in lieu of service upon the alleged insane person himself.⁶ While it has been the dictum of high authority⁷ that notices should be served in *every case*, and while this is also the practice in some states⁸ it is generally left within the *discretion* of the court to waive such notice in cases where it would be injurious or unnecessary to the patient.⁹

It has been argued that notice is not necessary on the ground that the order of commitment is an act that is not final in its nature, the statutes usually allowing a traverse of the proceedings, as in our own state.

As to hearings or trials in cases of alleged insanity, the right to some kind of a hearing or trial does not seem to have been in question, but as to its nature much difference in practice prevails. Trial by jury is recognized as a right in England and in many of the United States.¹⁰ Where it is granted, statutes usually allow the judge to waive such trial in cases where the patient is not in a proper condition to be brought into court. In our own state two decisions have held that the right of trial by jury does not extend to inquisitions of insanity.¹¹

It has been argued that the commitment of the insane is rather a *paternal* action than a *criminal* one, that the misfortunes of citizens often place them where for their care and preservation restraint is necessary and that such restraint is not deprivation of liberty within the meaning of the constitution.

⁶ New York Insanity Law.

⁷ Judge Andrews in the matter of Blewitt, 131 N. Y., 546.

⁸ Laws of Illinois, 1895, notice always given unless hearing is waived. Mich. § 1930 C2 = Sec. 23 Howell's Annotated Statutes.

⁹ New York Insanity Law and Massachusetts Statute.

¹⁰ Dey v. Stockton, N. J., 181.

Smith v. the People, 65 Illinois, 375.

State v. Baird, 47 Mo., 301.

Blackhawk Co. v. Springer, 58 Iowa, 417.

¹¹ Gaston v. Babcock, 6 Wis., 503.

Crocker v. State, 60 Wis., 553.

It would appear then, that if the legal requirements make notice and trials in cases of alleged insanity necessary, the medical requirements demand that they be applied to the smallest possible number of cases, and that the best statute were one in which the right to notice was granted, to be waived however in the very large number of cases where it would be injurious, the physician being the one to determine such cases, the judge however always having the right to overrule the physician, and taking the ultimate responsibility. This plan substantially has been adopted in our own case and constitutes the chief amendment proposed to our law.

Before considering this law there is matter with which the question of insane commitment is so correlated, which is indeed the basis of the agitation of the subject, that its brief treatment cannot be omitted even at the risk of digression. This is the matter of fraudulent commitments.

Are sane people shut up in insane asylums?

There is a widespread suspicion that such is the case. In popular phraseology "railroaded" into asylums. This suspicion is not confined to the laity but finds expression in opinions from the bench, in briefs of lawyers and in statutes of states. At a meeting of this body a few years ago it was stated that there were hundreds of persons in insane asylums or hospitals of this state (Wisconsin) who were not insane. Such suspicions are of so grave a nature that they should have the widest investigation. Fortunately information is at hand which ought to go far to dispel them. Our own state after investigation fails to show the existence of fraudulent or illegal commitment or detention. From other states, information is as follows: ¹²

"From Pennsylvania, Phillip C. Garrett, long identified with all that is good in public benevolence in his state, writes: "I do not know personally of a single instance of fraudulent commitment or malicious or intentional illegality in commitment."

From Massachusetts, Mr. Frank Sanborn, thoroughly versed in all that

¹² Dr. Richard Dewey, Presidential address American Medico-Psychological Association, 1896.

pertains to this matter, writes: "No commitments technically fraudulent have been so declared in Massachusetts by any court, so far as I know, since our commitment law took effect seventeen years ago. Nor have damages been recovered, I think, in any case of false imprisonment of the insane for thirty years."

Concerning Illinois, Dr. Wines, for a long period of years secretary of the State Board of Charities, writes: "I have not known of an illegal or fraudulent commitment to a hospital for the insane in my twenty-four years as secretary."

From New York, the state commissioner in lunacy, Dr. Carlos F. MacDonald, writes: "Speaking from personal observation and experience, covering a period of twenty-five years, I have yet to find a case of whose insanity I had any reasonable doubt, except in certain convalescent patients who were about ready to be discharged from the institution as recovered. I have not as yet found an authenticated instance of a sane person being certified as insane and incarcerated in an asylum through fraudulent intent, corrupt collusion or conspiracy on the part of physicians. We are all aware that mistakes in diagnosis occur, but these cases are quickly detected in the hospitals and their release promptly provided for. Moreover, in every case coming within my personal knowledge where a court or jury has discharged a person brought before it on a writ as not insane, the subsequent history of the case has shown that the patient was insane. In fact this has been the history of substantially every habeas corpus case that has occurred in this state."

The statement before parliament of the Earl of Shaftesbury, who for fifty years was chairman of the lunacy commission of England, where a large number of commitments are made without judicial hearing or trial, is of interest in this connection. He says: "I am quite certain that out of the 185,000 (persons whose medical certificates of insanity had passed through their office since 1859), there was not one who was not shut up upon good *prima facie* evidence that he ought to be under care and treatment."

Such statements should go far to prove that the belief that sane people are falsely shut up in insane asylums, has little or no foundation in fact, and that the suspicion is only a gaunt shadow conjured up from dark chambers of the human mind.

While in the past there may have been isolated cases where this terrible wrong was done, there are other causes which are more largely responsible for the false belief. A

large one is perhaps the fact that insanity is so coupled with odium that its once victim has an almost irresistible temptation to deny it, just as criminals deny their guilt and by the same mental process. Such a person easily convinces others and so the impression that, though confined in an asylum he was never insane, receives the widest publicity.

Fiction has also widely disseminated the idea. Being a subject of dramatic interest, novelists and playwrights have "worked" it and newspapers print sensational articles which nourish the belief—articles which if investigated would do much to dispel it.

Another potent cause lies in the mistaken idea of insanity in the public mind. This is largely a survival of medieval impressions of the disease, the classic idea, as seen in the pictures of Hogarth, and requires "furious madness" or conduct plainly "crazy" to establish it or as grounds for committing the patient.

In view of the fact that such false impressions as these widely prevail in our own state that they have been strengthened by the court in declaring the law invalid—that they have manifested themselves in attempts at remedial legislation during the last session, which had a ruthless disregard of the medical requirements and which if successful would have been inimical to the interests of the insane; in view of the fact that our law is much crippled in Milwaukee county where difficulty and delay still prevail, where the proper functionary refuses to commit patients, and commitments are almost entirely in the hands of the police court and court commissioners; in view of the fact of the doubtful appearance of another test case to carry the question before the supreme court, or that, if a case were so carried and the supreme court should sustain the lower court, the entire state would be plunged into a condition where all insane would be illegally confined and no further commitments could be made, with the result of no end of difficulty and possible litigation,— and

this after the adjournment of the legislature, when we would be without remedy,—in view of all this, the State Medical Society appointed a committee to co-operate with the bar association and others to make such amendment to the law as would fulfill the medical, as well as the legal requirements of the matter.

The chief amendments which have been proposed are the following:

Application for commitment is to be made by three respectable citizens instead of one. This is in response to the clamor for more "protection."

Notice of the proceeding and of a right of hearing to be given to patient by physicians unless it would be injurious or of no advantage to give it. Physicians to state in their report to the judge whether or not they have given such notice, the judge then taking the ultimate responsibility of sending or withholding it.

A provision for temporary detention, where doubtful or mild cases may be observed before commitment, in order to avoid mistakes in diagnosis, and where a fairly large number of alcoholics, neurasthenic, delirious, hysterical, febrile, etc., cases may be *sifted* out from those who ultimately need commitment.¹³

More stringency in the selection of the examining physicians is provided. In addition to good character and repute for medical skill and graduation from a legally incorporated medical college there is required three year's practice and *registration* as thus qualified.

The widest discretion is allowed the judge. The necessity of this is one of the strong convictions which experience in the commitment of the insane yields. Such discretion is given the judge in the matter of sending or withholding notice as above mentioned, in the matter of granting a jury trial when requested, in the matter of having examination by physicians take place in his presence, or appointing a guardian *ad litem*, temporary detention, etc.

¹³ The Chicago Detention Hospital Report of 1895 shows 1,185 admissions. Out of this number 307 did not require commitment.

The proceedings relieved as far as possible from intervention of police or court officers, station houses or jails.

The county court is given exclusive jurisdiction.

The voluntary commitment clause encouraging the voluntary entry of patients into insane hospitals for treatment.¹⁴

¹⁴ A law substantially in accord with these suggestions was afterward passed by the legislature of 1897 and is known as chapter 319, laws of 1897.

REPORT OF THE TREASURER FOR THE YEAR ENDING
NOV. 1, 1897.

State Conference of Charities and Correction in account
with Julius Zehnter, treasurer:

By annual dues,.....	\$74.00
Donation,.....	.50
	<hr/>
	\$74.50
To Tracy Gibbs & Co., printing,.....	\$1.25
A. L. Graebner, St. Louis,.....	20.50
Democrat Printing Company,.....	2.25
Hinrichs & Thompson,.....	.25
Trustees Presbyterian church, rent,.....	30.00
Germania Publishing Company,.....	11.75
Montello Express, printing,.....	6.00
	<hr/>
	\$72.00
Postage, stationery, express, etc., Sec.,.....	\$24.50
Expenses due H. H. Hart,.....	13.00
Expenses due Mrs. J. W. Stearns,.....	8.09
	<hr/>
	\$117.09
Deficit	\$42.59
	<hr/>
	\$117.09

Julius Zehnter, treasurer.

Madison, Wis., Oct. 28th, 1897.

LIST OF MEMBERS.

-
- R. T. Ely, Madison, Wis.
J. P. Dysart, Milwaukee, Wis.
W. A. Scott, Madison, Wis.
J. H. Raymond, Madison, Wis.
F. G. Holcomb, Madison, Wis.
E. D. Jones, Madison, Wis.
H. E. Briggs, Madison, Wis.
John Corscott, Madison, Wis.
A. L. Schmedeman, Madison, Wis.
M. S. Klauber, Madison, Wis.
F. Hinrichs, Madison, Wis.
J. Zehnter, Madison, Wis.
W. H. Graebner, Milwaukee, Wis.
J. C. Ludwig, Milwaukee, Wis.
R. L. Schmedeman, Madison, Wis.
Mrs. J. W. Stearns, Madison, Wis.
Mrs. Mary Kurtz, Milwaukee, Wis.
Frederick Wilkins, Viroqua, Wis.
Lynn S. Pease, Wauwatosa, Wis.
Mrs. L. S. Pease, Wauwatosa, Wis.
W. W. Reed, Jefferson, Wis.
J. Reynal, Jefferson, Wis.
R. Delay, Wauwatosa, Wis.
W. E. Voigt, Jefferson, Wis.
J. A. Quamman, Deerfield, Wis.
Mrs. W. F. Allen, Madison, Wis.
W. Riggert, Reedsburg, Wis.
C. Coleman, Baraboo, Wis.
C. S. McKown, West Salem, Wis.

- E. O. Holden, Baraboo, Wis.
H. C. Head, Wausau, Wis.
Alan Boyne, Arlington, Wis.
A. E. Elmore, Green Bay, Wis.
P. B. Knox, Madison, Wis.
Wm. Andrus, Reedsburg, Wis.
Mrs. W. Andrus, Reedsburg, Wis.
C. E. Warner, Windsor, Wis.
A. W. Wilmarth, Chappewa Falls, Wis.
W. P. Lyon, Madison, Wis.
Clarence Snyder, Madison, Wis.
John Dohm, Madison, Wis.
Geo. M. Neckerman, Madison, Wis.
L. P. Edwin, Verona, Wis.
C. A. Van Velzer, Madison, Wis.
M. R. Doyon, Madison, Wis.
S. A. Harper, Madison, Wis.
L. M. Hanks, Madison, Wis.
Wayne Ramsey, Madison, Wis.
J. J. Suhr, Madison, Wis.
J. M. Van Slyke, Madison, Wis.
C. F. Cooley, Madison, Wis.
C. N. Brown, Madison, Wis.
A. H. Hollister, Madison, Wis.
H. J. Veerhusen, Madison, Wis.
J. A. Jackson, Madison, Wis.
F. M. Brown, Madison, Wis.
W. C. Abaly, Madison, Wis.
F. G. Kraeger, Waukesha, Wis.
W. F. Klug, Milwaukee, Wis.
Lovila M. Mosher, Janesville, Wis.
Mrs. Mary W. Crosby, Janesville, Wis.
Lizzie J. Curtis, Janesville, Wis.
C. H. Lee, Racine, Wis.
J. W. Swiler, Delavan, Wis.
A. Salisbury, Whitewater, Wis.
Mrs. G. C. Swallow, Milwaukee, Wis.
Mrs. Willard Merrill, Milwaukee, Wis.
Mrs. J. L. Kaine, Milwaukee, Wis.

- Sarah J. Pierce, Milwaukee, Wis.
W. A. Gordon, Winnebago, Wis.
Elizabeth Whitehead, Mendota, Wis.
W. B. Lyman, Mendota, Wis.
Viola M. French, Mendota, Wis.
Mrs. W. H. Upham, Marshfield, Wis.



INDEX.

	Page
Officers	3
Minutes of Conference.....	5
Civil Service Reform Session.....	10
Papers read at the Conference:	
Report of Committee on Associated Charities and Charity Organizations, by Mrs. Mary Crosby...	18
The Feeble-Minded of Wisconsin, by James E. Heg..	23
Report of Committee on Commitment, Detention and Care of the Insane, by Frederick Wilkins.....	29
Are the County Asylums for the Insane Properly Equipped for the Due and Sufficient Care of Pa- tients? by Supt. C. S. McKown, La Crosse.....	38
The Employment of Patients in County Asylums for Insane in Summer and in Winter, by A. J. Whif- fen, Sheboygan.....	44
Treatment of Violent, Refractory, Destructive and Filthy Patients in County Asylums, by Supt. Wm. Andrus, Sauk County.....	47
Hindrances to the Proper and Efficient Management of Poor-Houses and Jails, by Supt. E. O. Holden, Baraboo	51
State Care of Dependent Children, by Prof. A. L. Graebner, St. Louis.....	57
A Few of the Vital Questions in Child-Saving in Wis- consin, with Suggestions from the Work in other States, by Mrs. W. F. Allen, Madison.....	73

	Page
Papers read at the Conference—continued.	
Sympathy and Reason in Charitable Work, by Prof. E. D. Jones, University of Wisconsin.....	87
Some Relations between the State and its Schools for the Deaf and Dumb, by Mrs. J. W. Stearns, Madison	100
The Medico-Legal Bearings of the Commitment of the Insane, and the Proposed Amendments to our Law, by W. F. Becker, M. D., Milwaukee...	108
Treasurer's Report, by Julius Zehnter, Madison.....	118
List of Members.....	119









REPORT
OF THE
STATE BOARD OF IMMIGRATION.

To the Honorable, Legislature of Wisconsin :

The State Board of Immigration respectfully submits the following report:

Four years ago, upon the urgent demand of the friends of northern Wisconsin as a means of aiding in obtaining new settlers for the vast area of unoccupied and uncultivated lands in that part of the state, the legislature created the State Board of Immigration.

As two years was the limit the legislature placed upon its existence, it expired January 1, 1897. The succeeding legislature enacted a similar law which constituted the governor and the secretary of state as such Immigration Board, to hold until the first day of April, 1899, with power to select a secretary.

This Board has disseminated a large amount of advertising literature (including Prof. Henry's Hand Book to Home Seekers, a publication authorized by the legislature of 1894-95) setting forth the natural resources of the unoccupied portions of the state to many foreign countries and to every state in the Union.

The Board has substantial evidence of the beneficial results to the state of this work in the many new settlers that have been secured, and approximate statement of which is embodied in this report.

The Board has been somewhat handicapped in the progress of its work by the insufficiency of the appropriation made for its use in two ways.

FIRST. The appropriation was insufficient to enable the Board to have another edition of Prof. Henry's Hand Book printed, a matter that was of much importance to the Board, as that book has been in great demand from railroad companies, real estate dealers, land corporations and individual home-seekers. The supply has been so limited that the Board has refrained from sending them out in bulk as much as possible, reserving them for single circulation where a less descriptive pamphlet would not answer the requirements.

SECOND. The appropriation was insufficient to permit the Board taking the initiatory step in colonization. In many instances, if the funds would have permitted, the Board could have defrayed the expenses of the heads of the colonies to our unsettled domain, where they could have had the benefit of a personal view of it, which undoubtedly would have been the means of securing the settlement of the people they represented.

The Board has now on hand about 35,000 folders, printed in English and 40,000 in the German language, left from a total of 200,000 that were printed under the orders of the present Board; about 300 of Prof. Henry's Hand Book and about 5,000 pamphlets in the Norwegian language which were printed by the preceding Board.

The Board has expended the full amount of the eight thousand dollars the legislature appropriated for its use except the sum of six hundred and eighteen dollars reserved for the necessary expenses that may occur from now to the end of its term.

Since January 1, 1897, new settlers have been located in the state as follows:

Ashland county	75 settlers.
Barron county	687 settlers.
Bayfield county	78 settlers.
Burnett county	311 settlers.
Chippewa county	601 settlers.
Clark county	408 settlers.
Douglas county	67 settlers.
Dunn county	15 settlers.
Florence county	7 settlers.
Forest county	33 settlers.

Iron county	35 settlers.
Langlade county	103 settlers.
Lincoln county	100 settlers.
Marathon county	392 settlers.
Marinette county	370 settlers.
Oconto county	62 settlers.
Oneida county	31 settlers.
Polk county	203 settlers.
Price county	251 settlers.
Sawyer county	30 settlers.
Shawano county	67 settlers.
St. Croix county	169 settlers.
Taylor county	188 settlers.
Vilas county	103 settlers.
Washburn county	287 settlers.
Wood county	464 settlers.
Total	5,141 settlers.

The foregoing settlers entered from the government 150,000 acres under the homestead law and purchased or contracted for 433,200 acres of uncultivated lands.

Nearly seventy-five per cent. of the new settlers came from outside of the state, while twenty-five per cent. are transfers from the older settled portions of Wisconsin.

Respectfully submitted,

EDWARD SCOFIELD,
Governor.

HENRY CASSON,
Secretary of State.

JOHN A. OGDEN,
Secretary.

State Board of Immigration.

Madison, December 20, 1898.



BIENNIAL REPORT

OF THE

Dairy and Food Commissioner

OF

WISCONSIN

For the Years 1897-1898.

H. C. ADAMS,
Dairy and Food Commissioner.



MADISON
DEMOCRAT PRINTING COMPANY, STATE PRINTER.
1899.

WISCONSIN DAIRY AND FOOD COMMISSION.

H. C. ADAMS,	- - - - -	Commissioner.
W. W. CHADWICK,	- - - - -	Dairy Expert.
A. S. MITCHELL,	- - - - -	Chemist.
N. J. FIELD,	- - - - -	Dairy Inspector.
FLORENCE Q. NORTON,	- - - - -	Stenographer and Confidential Clerk.

LETTER OF TRANSMITTAL.

MADISON, WIS., Oct. 1, 1898.

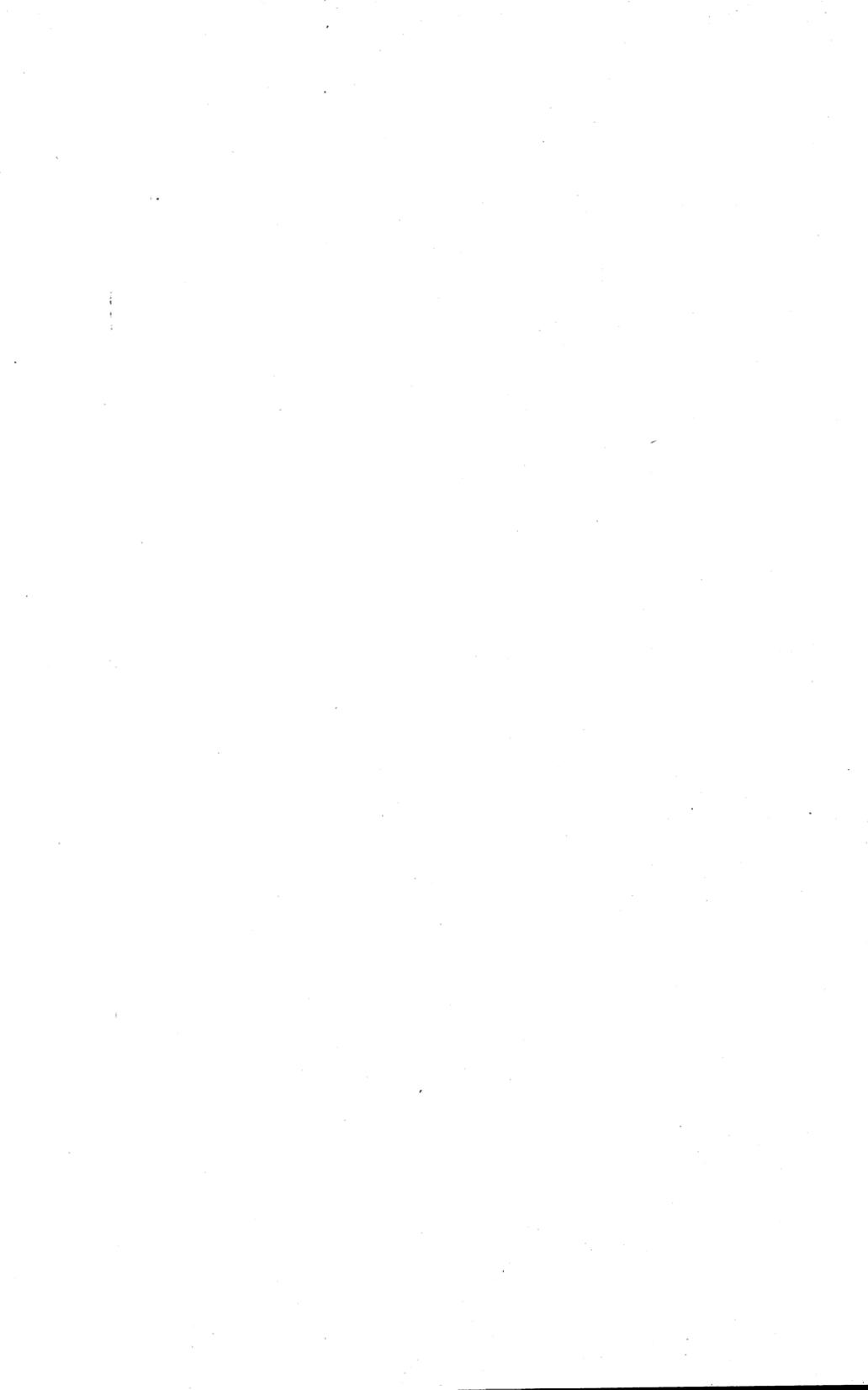
To his Excellency, EDWARD SCOFIELD,

Governor of the State of Wisconsin.

I have the honor, in compliance with chapter 109, laws of 1893, to submit herewith the report of this commission for the two years ending September 30, 1898.

H. C. ADAMS,

Commissioner.



Dairy and Food Laws

OF WISCONSIN.

OF THE OFFICE AND DUTIES OF THE DAIRY AND FOOD COMMISSIONER.

1. Appointment, term and compensation. [Sec. 1, ch. 452, laws of 1889.] The office of dairy and food commissioner for the state of Wisconsin, is hereby created. Such commissioner shall be appointed by the governor, by and with the advice and consent of the senate, and his term of office shall be for two years from the date of his appointment, and until his successor is appointed and qualified; provided, that the term of office of the commissioner first appointed under this act shall expire on the first Monday in February, 1891; and vacancies occurring in the office for any cause shall be filled by appointment for the balance of the unexpired term. The salary of the commissioner shall be twenty-five hundred dollars per annum and his necessary and actual expenses incurred in the discharge of his official duties.

2. Assistants, their qualifications and salaries. [Sec. 2, ch. 452, laws of 1889.] Such commissioner may, with the consent and advice of the governor, appoint two assistants, each of acknowledged standing, ability and integrity, one of whom shall be an expert in the matter of dairy products and the other of whom shall be a practical analytical

chemist. The salaries of such assistants shall not exceed eighteen hundred dollars each per annum and their necessary and actual expenses incurred in the discharge of their official duties.

Ch. 355, of the laws of 1897, fixes the salary of the assistant commissioner at \$1,600; of the chemist at \$1,800, and of the commissioner's stenographer and confidential clerk at \$900.

3. Agent to inspect dairies, etc. [Ch. 328, laws of 1897.] The dairy and food commissioner, with the approval of the governor, shall have authority to appoint an agent for the inspection of milk dairies, factories and creameries, and to assist in the work of the dairy and food commission at such times, and for such periods of time as may be required in the enforcement of the dairy and food laws of the state. The compensation of such agent shall be three dollars per day for each day of actual service, and his expenses, to be paid by the state.

4. Commissioner's duties. [Sec. 3, ch. 452, laws of 1889.] It shall be the duty of the commissioner to enforce all laws that now exist, or that may hereafter be enacted in this state, regarding the production, manufacture or sale of dairy products, or the adulteration of any article of food or drink or of any drug; and personally or by his assistants to inspect any article of milk, butter, cheese, lard, syrup, coffee or tea, or other article of food or drink or drug, made or offered for sale within this state which he may suspect or have reason to believe to be impure, unhealthful, adulterated or counterfeit, and to prosecute, or cause to be prosecuted, any person or persons, firm or firms, corporation or corporations engaged in the manufacture or sale of any adulterated or counterfeit article or articles of food or drink or drug, contrary to the laws of this state.

5. His powers — Sealing samples — Refusing to sell for analysis. [Sec. 4, ch. 452, laws of 1889.] Said commissioner or any assistant shall have power in the perform-

ance of his official duties to enter into any creamery, factory, store, salesroom or other place or building where he has reason to believe that any food or drink or drug is made, prepared, sold or offered for sale, and to open any cask, tub, package or receptacle of any kind containing or supposed to contain, any such article, and to examine or cause to be examined and analyzed the contents thereof; and the commissioner or any of his assistants may seize or take any article of food or drink or drug for analysis, but if the person from whom such sample is taken shall request him to do so, he shall at the same time, and in the presence of the person from whom such property is taken, securely seal up two samples of the article seized or taken, the one of which shall be for examination or analysis under the direction of the commissioner, and the other of which shall be delivered to the person from whom the articles were taken. And any person who shall obstruct the commissioner or any of his assistants by refusing to allow him entrance to any place which he desires to enter in the discharge of his official duty, or refuses to deliver to him a sample of any article of food or drink or drug made, sold, offered or exposed for sale by such person, when the same is requested and when the value thereof is tendered, shall be deemed guilty of a misdemeanor punishable by a fine of not exceeding twenty-five dollars for the first offense and not exceeding five hundred dollars or less than fifty dollars for each subsequent offense.

Questions of evidence as to sealing and analysis. If there is contradictory evidence concerning the sufficiency of the seal of a sample, and the credibility of the witnesses for the prosecution is submitted to the jury, the defendant is not injured. If there is evidence that a few drops of carbolic acid was added to a sample of milk, and it is submitted to the jury as a question of fact whether this would change the character of the milk, make the analysis impossible or difficult, or in any way injuriously affect the sample for the purpose of analysis, the defendant has no cause of complaint. *Commonwealth v. Spear*, 143 Mass., 172.

It is observed of a similar statute that it is intended to secure a fair examination and analysis, by providing the defendant with the means of

making an analysis of a portion of the same specimen which the state has analyzed. If the sample is not saved, or not saved in proper condition, he has no means of showing that his evidence, if any he has as to the quality of the milk, applies to that with reference to which the government witnesses have testified. It cannot be said that a portion reserved is sealed, within the meaning of the statute, when wax is merely placed on the top of the cork, and not extended over the mouth of the bottle, thus making it airtight, if it is shown that the character of the milk will be affected by the air. *Commonwealth v. Lockhardt*, 144 Mass., 132.

Where the article analyzed has not been taken under the statute the competency of evidence is to be determined by the common law, and the testimony of any person who had sufficient skill to analyze it, and who has analyzed some which was proven to have been sold by the defendant, is admissible. *Commonwealth v. Holt*, 146 Mass., 38.

6. District attorneys to assist—Disposition of fines. [Sec. 5, ch. 452, laws of 1889.] It shall be the duty of the district attorney in any county of the state, when called upon by the commissioner or any of his assistants, to render any legal assistance in his power to execute the laws, and to prosecute cases arising under the provisions of this act; and all fines and assessments collected in any prosecution begun or caused to be begun by said commissioner or his assistants shall be paid into the state treasury.

Counsel may be employed. See paragraph 24 which also provides that district attorneys shall assist the commissioner.

7. Analysis of articles—Assistance at institutes, etc. [Sec. 6, ch. 452, laws of 1889.] With the consent of the governor, the state board of health may submit to the commissioner, or to any of his assistants, samples of water or of food or drink or drugs, for examination or analysis, and receive special reports showing the result of such examination or analysis. And the governor may also authorize the commissioner or his assistants, when not otherwise employed in the duties of their offices, to render such assistance in the farmers' institutes, dairy and farmers' conventions, and the agricultural department of the university, as shall by the authorities be deemed advisable.

8. Payment of salaries and expenses. [Sec. 7, ch. 452, laws of 1889.] The salaries of the commissioner and his assistants shall be paid out of the state treasury in the same manner as the salaries of other officers are paid, and their official expenses shall be paid at the end of each calendar month upon bills duly itemized and approved by the governor, and the amount necessary to pay such salaries and expenses is hereby appropriated annually.

9. Laboratory, and materials for. [Sec. 8, ch. 452, laws of 1889.] The commissioner may, under the direction of the governor, fit up a laboratory, with sufficient apparatus for making the analysis contemplated in this act, and for such purpose the sum of fifteen hundred dollars, or so much thereof as may be necessary, is hereby appropriated, and for the purpose of providing materials and for other necessary expenses connected with the making of such analyses, there is also hereby appropriated so much as may be necessary, not exceeding six hundred dollars annually. The appropriations provided for in this section shall be drawn from the state treasury upon the certificates of the governor.

10. Biennial report. [Sec. 9, ch. 452, laws of 1889, as amended by ch. 109, laws of 1893.] Said commissioner shall be furnished a suitable office in the capitol at Madison, and shall make a biennial report to the governor, which shall contain an itemized account of all expenses incurred and fines collected, with such statistics and other information as he may regard of value; and with the consent of the governor not exceeding twenty thousand copies thereof, limited to three hundred pages, may be published biennially, as other official reports are published, and of which five thousand copies shall be bound in cloth.

Stationery. Ch. 197, laws of 1895, authorizes the commissioner to obtain stationery for the use of his office.

SALE OF IMPURE MILK.

11. Penalty for. [Sec. 1, ch. 425, laws of 1889, as amended by ch. 106, laws of 1897.] Any person who shall sell or offer for sale, or furnish or deliver, or have in possession, with intent to sell or offer for sale or furnish or deliver to any creamery, cheese factory, corporation, person or persons whatsoever, as pure, wholesome and unskimmed, any unmerchantable, adulterated, impure, or unwholesome milk, shall, upon conviction thereof, be punished by a fine of not less than twenty-five nor more than one hundred dollars for each and every offense.

Validity of statute. A New York law (ch. 183 of 1885, ch. 202 of 1884), providing that "no person or persons shall sell, supply or bring to be manufactured, to any butter or cheese manufactory, any milk diluted with water, or any unclean, impure, unhealthy, adulterated or unwholesome milk," has been sustained as a valid exercise of legislative power. *People v. West*, 106 N. Y., 293.

Construction — Indictment. The New York law does not make fraudulent intent a necessary ingredient of the offense and it would not be a reasonable construction of it to apply it to a dairyman who owns and conducts a butter or cheese factory for the manufacture of those articles from milk furnished exclusively by himself, from his own cows. If the defendant is such a person, these facts are matter of defense, and their existence need not be negated on the face of the indictment. *People v. West*, 106 N. Y., 293.

Under a Massachusetts law imposing a penalty for selling or offering to sell "adulterated milk, or milk to which any foreign substance has been added," it is immaterial whether the substance added is injurious or not. The indictment need not allege the quantity of such substance. *Commonwealth v. Schaffner*, 16 Northeast. Rep., 280, 146 Mass., 512.

Under an act which prohibits the sale of milk which is not of a good, standard quality, the fact that the milk was delivered under a contract to furnish the person who bought it with the milk of one dairy, is not a defense if that furnished was not of such quality. The contract would be held to contemplate milk which should be bought and sold. *Commonwealth v. Holt*, 14 Northeast. Rep., 930, 146 Mass., 38.

Intent to sell, evidence of. Where one is charged with having in his possession, with intent to sell, milk which is not of a good, standard quality, the fact that he was upon a wagon which had his name painted on it, and that therein were cans of milk, and that a sample was given from one of them to one employed by the milk inspector for analysis, is competent evidence go to the jury upon the question of his intent. *Commonwealth v. Rowell*, 15 Northeast. Rep., 154, 146 Mass., 128.

Effect of the act of 1889 upon previous laws. It seems reasonably clear that sec. 1, of ch. 425, laws of 1889, as amended by ch. 106, laws of 1897, paragraph 11, supersedes sec. 1, of ch. 157, laws of 1887, as to the offense of selling diluted, impure and unclean milk. Both the acts referred to cover the provisions of sec. 4607, R. S., and hence that section is not in force.

What is a sale. A restaurant keeper who sells milk to be drunk by his guests on his premises is liable if the milk so sold is not of the prescribed quality. *Commonwealth v. Vieth*, 155 Mass., 442. See note to paragraph 17. Milk bought by a guest and delivered to him as part of his meal is as much a sale as if a specific price had been put upon it, or it had been bought or paid for by itself. *Commonwealth v. Warren*, 160 Mass., 533.

12. Standard for pure. [Sec. 2, ch. 425, laws of 1889.] In all prosecutions or other proceedings under this or any other law of this state relating to the sale or furnishing of milk, if it shall be proven that the milk sold or offered for sale, or furnished or delivered, or had in possession with intent to sell or offer for sale, or to furnish or deliver as aforesaid, as pure, wholesome and unskimmed, contains less than three per centum of pure butter fat, when subjected to chemical analysis or other satisfactory test, or that it has been diluted or any part of its cream abstracted, or that it or any part of it was drawn from cows known to the person complained of to have been within fifteen days before or four days after parturition, or to have any disease or ulcers or other running sores, then and in either case the said milk shall be held, deemed and adjudged to have been unmerchantable and adulterated, impure or unwholesome, as the case may be.

Validity of provision as to standard of purity. The supreme court of New York has ruled that a statute which provides that milk which contains less than three per centum of fat shall be declared adulterated is un-

constitutional. The ground upon which this was held was that the statute deprived the defendant of his liberty and property without due process of law, in that it barred him of the right upon the trial of the accusation against him to have the issue determined according to what might be the proof, and compelled him to submit to the statutory declaration thereof, without regard to the truth. *People v. Cipperly*, 37 Hun, 317. This decision was not unanimous, and on appeal was reversed by the court of appeals, without opinion, and on the grounds given by the dissenting judge of the supreme court. *People v. Cipperly*, 101 N. Y., 634.

A law of New Hampshire (ch. 42, laws of 1883), prohibited the sale of adulterated milk, or milk to which water or any foreign substance has been added, or, as pure, milk from which the cream or a part thereof has been removed. It authorized inspectors of milk to take samples and cause the same to be analyzed, and expressed that in all prosecutions under it if the milk is shown by analysis to contain more than eighty-seven per cent. of watery fluid, or less than thirteen per cent. of milk solids, it shall be deemed for the purposes of the statute to be adulterated. It was contended that the clause fixing the standard was unconstitutional. In answer the court said: "The statute tends to discourage the breeding of a certain class of cattle for the supply of the milk market. The difficulty of guarding against the adulteration of milk may have influenced the legislature in fixing a standard of richness. Practically it makes no difference whether milk is diluted after it is drawn from the cow, or whether it is made watery by giving her such food as will produce milk of an inferior quality, or whether the dilution, regarded by the legislature as excessive, arises from the nature of a particular animal, or a particular breed of cattle. The sale of such milk to unsuspecting consumers, for a price in excess of its value, is a fraud which the statute was designed to suppress. It is a valid exercise by the legislature of the police power for the prevention of fraud, and protection of the public health, and as such is constitutional." *State v. Campbell*, 64 N. H., 402.

In Rhode Island a similar provision has been sustained against an objection to its validity on the ground that it virtually confined the testimony to the analysis of the samples taken by the inspector, which samples were destroyed in making the analysis, so that the testimony could not be controverted. The court, however, was of the opinion "that the testimony, though it may not always be practicable to controvert it directly by another analysis, can be controverted by evidence of collateral facts going to prove that the analysis is incorrect, and, therefore, that the act is not unconstitutional for the reason alleged." *State v. Groves*, 15 R. I., 208, 1 Atl. Rep., 334. *Shivers v. Newton*, 45 N. J. L., 469, is to much the same effect.

Intent immaterial. The doing of the act condemned by the law constitutes the offense, if it is silent as to the knowledge or intent of the person who is charged with violating it. *People v. Kibler*, 106 N. Y., 321, 12 N. E. Rep., 795.

13. Proof of adulteration, how made. [Sec. 2, ch. 157, laws of 1887, as amended by ch. 344, laws of 1889.] Proof of adulterations and skimming may be made with such standard tests and lactometers as are used to determine the quality of milk, or by chemical analysis.

14. Sale, etc., of milk or cream containing antiseptics injurious to health. [Ch. 168, laws of 1895.] Any person who shall sell or offer for sale, or consign, or have in his possession with intent to sell to any person or persons, any milk, cream, butter, cheese, or other dairy products, or who shall deliver to any creamery or cheese factory, milk or cream to be manufactured into butter or cheese, to which boracic acid, salicylic acid, or compounds containing them, or other antiseptics injurious to health, have been added, shall be deemed guilty of a misdemeanor, and upon conviction thereof be punished by a fine of not less than twenty-five nor more than one hundred dollars for each and every offense.

Intent to sell. See note to paragraph 11.

IMITATION BUTTER AND CHEESE.

15. Filled cheese. [Sec. 1, ch. 30, laws of 1895.] No person, by himself or by his agents or servants, shall manufacture, or shall buy, sell, offer, ship, consign, expose or have in his possession for sale any cheese manufactured from or by the use of skimmed milk to which there has been added any fat which is foreign to such milk.

16. Size of skimmed-milk cheese. [Sec. 2, ch. 30, laws of 1895.] No person, by himself or by his agents or servants, shall manufacture, or shall buy, sell, offer, ship, consign, expose or have in his possession for sale, within this state, any skimmed milk cheese, or cheese manufactured from milk from which any of the fat originally contained therein has been removed, except such cheese is ten inches in diameter and nine inches in height.

17. Imitation butter. [Sec. 3, ch. 30, laws of 1895.] No person, by himself or by his agents or servants, shall render or manufacture, sell, ship, consign, offer for sale, expose for sale, or have in his possession with intent to sell, any article, product or compound made wholly or partly out of any fat, oil or oleaginous substance or compound thereof, not produced from unadulterated milk or cream from the same, and without the admixture or addition of any fat foreign to said milk or cream, which shall be in imitation of yellow butter produced from pure unadulterated milk or cream of the same, with or without coloring matter; provided, that nothing in this act shall be construed to prohibit the manufacture or sale of oleomargarine in a separate and distinct form and in such manner as will advise the consumer of its real character, free from coloration or ingredient that causes it to look like butter.

Validity. The foregoing section is almost an exact copy of sec. 1 of ch. 5, acts of Massachusetts, 1891. The words, "ship, consign," "and without the admixture or addition of any fat foreign to said milk or cream," found in this section, are not in the Massachusetts act. In *Commonwealth v. Huntley*, 156 Mass., 236, 30 N. E. Rep., 1127, the question of the validity of the act referred to came before the court. It was an agreed fact that the oleomargarine sold by the defendant was brought to Massachusetts from another state, and was sold there in the original package, and assumed by the court that it was wholesome, palatable and nutritious. The validity of the act, so far as the state constitution was concerned, does not appear to have been questioned. On this branch of the subject, the court quoted from the opinion of the court of appeals of Missouri in the case of *State v. Addington*, 12 Mo. App., 214, 223, language which has been approved by the supreme court of Pennsylvania in *Powell*

v. Commonwealth, 114 Penn. St., 265, 295, a case which was carried to the supreme court of the United States, and there affirmed, *Powell v. Pennsylvania*, 127 U. S., 678: "If an article of food is of such a character that few persons will eat it knowing its real character; if, at the same time, it is of such a nature that it can be imposed upon the public as an article of food which is in common use, and against which there is no prejudice; and if, in addition to this, there is probable ground for believing that the only way to prevent the public from being defrauded into purchasing the counterfeit article for the genuine is to prohibit altogether the manufacture and sale of the former, then we think such a prohibition may stand as a reasonable police regulation, although the article prohibited is in fact innocuous, and although its production might be found beneficial to the public, if in buying it they could distinguish it from the production of which it is the imitation." The Massachusetts court also said that "in New Hampshire, Missouri, Minnesota, New York, New Jersey, and Pennsylvania, statutes prohibiting the sale of oleomargarine made in imitation of butter have been upheld by the courts as valid. *State v. Marshall*, 64 N. H., 549; *State v. Addington*, 77 Mo., 110, 12 Mo. App., 214; *Butler v. Chambers*, 36 Minn., 69; *People v. Arensberg*, 105 N. Y., 123; *State v. Newton*, 21 Vroom (50 N. J. L.), 534; *Powell v. Commonwealth*, 114 Penn. St., 265." To the same effect are *McAllister v. State*, 72 Md., 390; *Weideman v. State*, 56 N. W. Rep., 688; *State ex rel. v. Horgan*, 55 Minn., 183. The doubtful question in the Massachusetts case arose under the provision of the constitution of the United States giving to congress power to regulate commerce among the several states. On this point, inasmuch as the statute only applied to oleomargarine which was deceptive, and authorized the sale, under restrictions, of that which was not deceptive, and did not forbid the transportation or storage of the former, a majority of the court held it valid. *Commonwealth v. Huntley*, 156 Mass., 236, 30 N. E. Rep., 1127.

The ruling of the United States supreme court. The validity of the Massachusetts statute, so far as it was affected by the clause of the federal constitution giving congress power over commerce, came before the supreme court of the United States in *Plumley v. Massachusetts*, 155 U. S., 461. It was there held, by a majority of the judges (three dissenting), that the federal statute imposing special taxes upon manufacturers and wholesale and retail dealers in oleomargarine does not restrict the power of the states over the manufacture and sale thereof within their respective limits. "The taxes prescribed by that act were imposed for national purposes, and their imposition did not give authority to those who paid them to engage in the manufacture or sale of oleomargarine in any state which lawfully forbade such manufacture or sale, or to disregard any regulation which a state might lawfully prescribe in reference to that article. . . .

Nor was the act of congress relating to oleomargarine intended as a regulation of commerce among the states. Its provisions do not have special application to the transfer of oleomargarine from one state of the union to another. They relieve the manufacturer or seller, if he conforms to the regulations prescribed by congress or by the commissioner of internal revenue, under the authority conferred upon him in that regard, from penalty or punishment so far as the general government is concerned, but they do not interfere with the exercise by the states of any authority they possess of preventing deception or fraud in the sales of property within their respective limits."

The opinion of the court then proceeds to discuss the validity of the statute of Massachusetts as affected by the commerce clause of the federal constitution. "It will be observed," said Justice Harlan, "that the statute of Massachusetts which is alleged to be repugnant to" that clause "does not prohibit the manufacture or sale of all oleomargarine, but only such as is colored in imitation of yellow butter produced from pure unadulterated milk or cream of such milk. If free from coloration or ingredient that causes it to look like butter, the right to sell it 'in a separate and distinct form, and in such manner as will advise the consumer of its real character,' is neither restricted nor prohibited. It appears, in this case, that oleomargarine, in its natural condition, is of a 'light yellowish color,' and that the article sold by the accused was artificially colored 'in imitation of yellow butter.' Now the real object of coloring oleomargarine so as to make it look like genuine butter is that it may appear to be what it is not, and thus induce unwary purchasers, who do not closely scrutinize the label upon the package in which it is contained, to buy it as and for butter produced from unadulterated milk or cream from such milk. The suggestion that oleomargarine is artificially colored so as to render it more palatable and attractive can only mean that customers are deluded, by such coloration, into believing that they are getting genuine butter. If any one thinks that oleomargarine, not artificially colored so as to cause it to look like butter, is as palatable or wholesome for purposes of food as pure butter, he is as, already observed, at liberty under the statute of Massachusetts to manufacture it in that state or to sell it there in such manner as to inform the customer of its real character. He is only forbidden to practice, in such matters, a fraud upon the general public. The statute seeks to suppress false pretenses and to promote fair dealing in the sale of an article of food. It compels the sale of oleomargarine for what it really is, by preventing its sale for what it is not."

After reviewing many of the cases cited by the supreme court of the United States and relied upon by counsel for the defendant to support his contention that the statute was void, the opinion uses this language: "In none of the above cases is there to be found a suggestion

or intimation that the constitution of the United States took from the states the power of preventing deception and fraud in the sale, within their respective limits, of articles in whatever state manufactured, or that that instrument secured to any one the privilege of committing a wrong against society. . . . If there be any subject over which it would seem the states ought to have plenary control, and the power to legislate in respect to which it ought not to be supposed was intended to be surrendered to the general government, it is the protection of the people against fraud and deception in the sale of food products. Such legislation may, indeed, indirectly or incidentally affect trade in such products transported from one state to another state. But that circumstance does not show that laws of the character alluded to are inconsistent with the power of congress to regulate commerce among the states. For, as said by this court in *Sherlock v. Alling*, 93 U. S., 99, 103: 'In conferring upon congress the regulation of commerce, it was never intended to cut the states off from legislating on all subjects relating to the health, life and safety of their citizens, though the legislation might indirectly affect the commerce of the country. Legislation, in a great variety of ways, may affect commerce and persons engaged in it without constituting a regulation of it within the meaning of the constitution. . . . And it may be said generally, that the legislation of a state, not directed against commerce or any of its regulations, but relating to the rights, duties, and liabilities of citizens, and only indirectly and remotely affecting the operations of commerce, is of obligatory force upon citizens within its territorial jurisdiction, whether on land or water, or engaged in commerce, foreign or interstate, or in any other pursuits.'

The opinion of the court then proceeds to point out that the case of *Leisy v. Hardin*, 135 U. S., 100, in which it was held that ardent spirits, distilled liquors, ale and beer, were subjects of exchange, barter and traffic, and, being articles of commerce, their sale while in the original packages in which they are carried from one state to another, could not, without the assent of congress, be forbidden by the state into which they were transported, was not conclusive of the case before it, because the articles sold in that case were what they purported to be. The opinion of the majority of the court on the Massachusetts statute concluded thus: "We are of opinion that it is within the power of a state to exclude from its markets any compound manufactured in another state, which has been artificially colored or adulterated so as to cause it to look like an article of food in general use, and the sale of which may, by reason of such coloration or adulteration, cheat the general public into purchasing that which they may not intend to buy. The constitution of the United States does not secure to any one the privilege of defrauding the public. The deception against which the statute of Massachusetts is

aimed is an offense against society; and the states are as competent to protect their people against such offenses or wrongs as they are to protect them against crimes or wrongs of more serious character. And this protection may be given without violating any right secured by the national constitution, and without infringing the authority of the general government. A state enactment forbidding the sale of deceitful imitations of articles of food in general use among the people does not abridge any privilege secured to citizens of the United States, nor, in any just sense, interfere with the freedom of commerce among the several states."

Expose for sale. Under the English statute regulating the sale of margarine it has been held that margarine kept for sale upon the counter of a shop, but behind a screen hiding it from the view of customers, is not exposed for sale, *Crane v. Lawrence*, 25 Queen's B. Div., 152; and that parcels of margarine placed upon a counter or shelf, in view of customers, are exposed for sale, although so wrapped in paper that the margarine cannot be seen. *Wheat v. Brown*, [1892] 1 Queen's B., 418.

In Massachusetts, from whence this section was borrowed (see first sentence of note), the court has said, in a case decided in 1893, that whenever goods are placed for convenient delivery upon expected sales, they are put out and in one sense exposed for sale. But in our opinion, the words are not so used in the statute under consideration. The prohibited articles are designed and adapted to deceive the eye, and because their appearance is likely to induce those who see them to buy them as the genuine of butter of which they are in imitation, there is special reason for prohibiting their exposure to view. It was held that oleomargarine colored in imitation of yellow butter and kept for sale in a shop, so long as it is in a closed and covered refrigerator and cannot be seen by customers, is not exposed for sale, notwithstanding there is a sign in the shop to the effect that oleomargarine is sold there. *Commonwealth v. Byrnes*, 158 Mass., 172.

Sale, what is. A restaurant keeper who furnishes oleomargarine to a customer, as part of a meal ordered by the latter, sells the same, notwithstanding the meal is paid for as a whole, and the oleomargarine is not eaten, but carried away. *Commonwealth v. Miller*, 131 Pa., 118. See note to paragraph 11.

A foreign manufacturer who puts up oleomargarine in packages evidently adopted for and intended to meet the requirements of an unlawful retail trade in another state, sending them to an agent there for sale to consumers, is not engaged in interstate commerce, but in an effort to carry on a forbidden business. *Commonwealth v. Paul*, 170 Pa., 284.

18. Sale of. [Sec. 4, ch. 30, laws of 1895.] It shall be unlawful for any person to sell or offer for sale to any person who asks, sends or inquires for butter, any oleomarga-

rine, butterine or any substance made in imitation or semblance of pure butter not made entirely from the milk of cows, with or without coloring matter.

19. Notice of sale of oleomargarine, etc. [Sec. 5, ch. 30, laws of 1895.] It shall be unlawful for any person to expose for sale oleomargarine, butterine, or any similar substance not marked and distinguished on the outside of each tub, package or parcel thereof by a placard with the word "oleomargarine," and not having also upon every open tub, package or parcel thereof a placard with the word "oleomargarine," such placard in each case to be printed in plain, uncondensed gothic letters not less than one inch long, and such placard shall not contain any other words thereon.

Expose for sale. See note to paragraph 17.

Provision valid. See note to paragraph 17. A statute which provides that no person shall sell any lard, or any article intended for use as lard, which contains any ingredient but the pure fat of healthy swine, under any label bearing the words "refined," "pure," "family," unless every package in which the article is sold is marked "compound lard," has been sustained as valid by the supreme court of Iowa. *State v. Snow*, 47 N. W. Rep., 777.

In Minnesota a statute which makes it a misdemeanor to manufacture for sale within that state, or to sell or offer to do so, baking powder containing alum, unless each package thereof is labelled, "this baking powder contains alum," has been sustained. *Stoltz v. Thompson*, 46 N. W. Rep., 410.

In Ohio it has been held that it is "within the undoubted power of the legislature to prohibit the sale of substances having the semblance of butter or cheese, but not wholly made from pure cream or milk, unless each package of such substance should have printed, stamped or marked thereon, in the manner prescribed by the statute, the name of each article used in, or entering into, the composition of such substance, and this power is possessed by the legislature over the sale of articles protected by letters patent as well as of those not protected." *Palmer v. State*, 39 Ohio St., 237.

20. Same, notice, how given. [Sec. 6, ch. 30, laws of 1895.] It shall be the duty of every person who sells oleomargarine, butterine, or any similar substance, from any dwelling, store, office or public mart, to have conspicuously

posted thereon the placard or sign, in letters not less than four inches in length, "oleomargarine sold here," or "butterine sold here." Such placard shall be approved by the dairy and food commissioner of the state of Wisconsin.

21. Notice of sale from vehicles. [Sec. 7, ch. 30, laws of 1895.] It shall be unlawful for any person to peddle, sell or deliver from any cart, wagon or other vehicle, upon the public streets or ways, oleomargarine, butterine, or any similar substance, not having on the outside of both sides of said cart, wagon or other vehicle the placard in uncondensed gothic letters, not less than three inches in length, "licensed to sell oleomargarine."

This section is not in the exact words of sec. 4, ch. 412, acts of Mass., 1891, though it is modeled after it. That act does not use the words "on the outside of both sides," etc., but contained the phrase "on both sides of the vehicle." It was held that placing the placards on the inside of the cover of the wagon, which was open at both ends, was not a compliance with the law. It was also ruled that the statute was not in conflict with the act of congress authorizing the licensing of the sale of oleomargarine. *Commonwealth v. Crane*, 158 Mass., 218, 33 N. E. Rep., 388.

22. Notice to guests at hotels, etc. [Sec. 8, ch. 30, laws of 1895.] It shall be unlawful for any person to furnish, or caused to be furnished, in any hotel, boarding house, restaurant, or at any lunch counter, oleomargarine, butterine or any similar substance to any guest or patron of said hotel, boarding house, restaurant, or lunch counter, without first notifying such guest or patron that the substance so furnished is not butter.

See notes to paragraphs 17, 19, 21. This section is similar to sec. 5, ch. 412, Mass. acts, 1891. Notice given by printed signs and on the bills of fare satisfies the statute; it need not be given, either orally or in writing, to each guest on every occasion when he is furnished with oleomargarine or butterine in the stead of butter. *Commonwealth v. Stewart*, 159 Mass., 113.

23. Penalties. [Sec. 9, ch. 30, laws of 1895.] Any person who shall violate any of the provisions of this act shall

be guilty of a misdemeanor, and upon conviction thereof shall be punished for the first offense by a fine of not less than fifty dollars nor more than five hundred hundred dollars; and upon conviction of any subsequent offense shall be punished by a fine of not less than one hundred dollars or more than five hundred dollars, or by imprisonment in the county jail of not less than ten days nor more than sixty days, or by both such fine and imprisonment, at the discretion of the court.

24. Duty of district attorneys — Special counsel. [Sec. 10, ch. 30, laws of 1895.] It shall be the duty of the district attorney in any county of the state, when called upon by the dairy and food commissioner of this state, or any of his assistants, to render any legal assistance in his power to execute, and to prosecute the cases arising under the provisions of this act; and the dairy and food commissioner shall have power to appoint, with the approval of the governor, special counsel to prosecute or to assist in the prosecution of any case arising under the provisions of this act.

25. Butter and cheese, use of, in state institutions. [Sec. 7, ch. 165, laws of 1891.] No butter or cheese not made wholly and directly from pure milk or cream, salt and harmless coloring matter shall be used in any of the charitable or penal institutions of the state.

26. Penalty. [Sec. 8, ch. 165, laws of 1891.] Any person or persons violating any of the provisions or sections of this act, shall upon conviction thereof, be fined not less than twenty-five nor more than fifty dollars for the first offense, or for each subsequent offense not less than fifty nor more than one hundred dollars, or be imprisoned in the county jail not less than ten nor more than ninety days or both.

Sec. 9, ch. 165, 1891, is repealed by ch. 189, 1897, and the other sections of the act of 1891 are believed to be superseded by ch. 228, 1893, paragraphs 27-32.

BRANDING CHEESE, ETC.

27. Sale of falsely branded. [Sec. 1, ch. 228, laws of 1893.] No person shall offer for sale, sell, ship or consign cheese labeled with a false brand or label as to the quality of the article.

28. Uniform brand. [Sec. 2, ch. 228, laws of 1893.] The state dairy and food commissioner is hereby authorized and directed to issue to the cheese manufactories of the state, upon proper application therefor and under such regulations as to the custody and use thereof as he may prescribe, a uniform stencil or brand, bearing a suitable device or motto and the words "Wisconsin full cream cheese."

29. Brand, how used — Registration of factories. [Sec. 3, ch. 228, laws of 1893.] Every brand issued shall be used upon the side of the cheese on the bandage thereof, also upon the package containing the same, and shall bear a different number for each separate manufactory, and the commissioner shall keep a book in which shall be registered the name, location and number of each manufactory using the said brand, and the name or names of the persons at each manufactory authorized to use the same.

30. Fraudulent use of brand. [Sec. 4, ch. 228, laws of 1893.] It shall be unlawful to use or permit such brand to be used upon any other than full cream cheese, or package containing the same.

31. Brand for skimmed cheese. [Sec. 5, ch. 228, laws of 1893.] Every person who shall, at any cheese factory in the state, manufacture skimmed cheese, shall distinctly and durably stamp upon each and every such cheese, and upon the box, the words "Wisconsin skimmed cheese." All cheese not manufactured as in sections 1, 2, 3 and 4, of this act, shall be deemed to be skimmed cheese under the provisions of this act. The brand herein provided by this

section of this act, for designating the grade and quality of cheese provided by this section shall be such as to produce an impression not less than three inches in width and five inches in length, and shall be in full-faced capital letters of as large size as the space hereby provided for will permit, and the whole to be included within a plain, heavy border. Ordinary stamping ink, either red, green or violet in color, and of such composition as not to be easily removed or wholly obliterated by moisture, shall be used in stamping as provided for by this section.

So far as the act of 1893 relates to branding skimmed cheese, it is probably superseded by that part of ch. 30, 1895, embodied in paragraph 16. The provisions of the act of 1893, relating to branding full cream cheese, are in force, and supersede ch. 165, 1891.

32. Penalty. [Sec. 6, ch. 228, laws of 1893, as amended by ch. 189, 1897.] Whoever violates the provisions of this act shall be deemed guilty of a misdemeanor, and for each and every package so falsely branded or omitted to be branded as herein provided, shall be punished by a fine of not less than twenty-five nor more than fifty dollars.

CLEANLINESS OF DAIRIES, FACTORIES AND CONDEMNATION OF IMITATION DAIRY PRODUCTS.

33. Powers of dairy and food commissioner. [Sec. 1, ch. 257, laws of 1895.] The dairy and food commissioner or his agents shall have full access and ingress to any factory or building where any product of the dairy is manufactured or stored for sale or shipment of the same, and shall be empowered to enforce such measures as may be necessary for the perfect cleanliness of said factories, buildings and surroundings, also for the cleanliness of all

the utensils necessarily used in the manufacture and general handling of the dairy product. Any person refusing the privilege of such access to the dairy and food commissioner or his agent, or opposing him in any way shall be considered as having committed a misdemeanor.

34. Warrant for seizure of imitation products. [Sec. 2, ch. 257, laws of 1895.] When complaint shall be made on oath to any magistrate authorized to issue warrants in criminal cases, that imitation butter or imitation cheese or any substance designed or intended to be used as a substitute for butter or cheese, is in the possession or under the control of any person or persons contrary to the provisions of law of this state, and that the complainant believes that it is concealed in any particular warehouse, store or refrigerator for mercantile purposes, the magistrate, if he be satisfied that there be cause for such belief, shall issue a warrant for such property.

35. Terms of the warrant. [Sec. 3, ch. 257, laws of 1895.] All such warrants shall be directed to the sheriff of the county or his deputy or to any constable of the county commanding such officer to search the house, building, store or other place where the imitation butter or imitation cheese or any substance designed or intended to be used as imitation butter or cheese, for which he is required to search, is believed to be concealed, which place and property to be searched for shall be designated and described in the warrant, and to bring such property when found and the person or persons in whose possession the same shall be found before the magistrate who issued the warrant or before some other magistrate or court having cognizance of the case.

36. Preservation, analysis and confiscation of property [Sec. 4, ch. 257, laws of 1895.] When any officer in the execution of a search warrant under the provisions of this act shall find any imitation butter or cheese, or any substance designed or intended to be used as an imitation

for butter or cheese, and for which a search is allowed by this act, all the property so seized shall be safely kept by the direction of the court or magistrate so long as shall be necessary for the purpose of being produced as evidence on any trial; provided, that it shall be the duty of the officer who serves a search warrant issued for imitation butter or imitation cheese or any substance designed or intended to be used as imitation for butter or cheese and alleged to be in his possession or under the control of any person or persons contrary to law, to deliver to the state dairy and food commissioner, or to any person by such commissioner authorized in writing to receive the same, a true and perfect sample of each article seized by virtue of such warrant, for the purpose of having the same analyzed. If any sample be found to be imitation butter or imitation cheese or substance designed or intended to be used as an imitation for butter or cheese and that the same, at the time of such seizure, was in the possession or under the control of any person or persons contrary to any of the provisions or requirements of this act, then and in such case the property so seized shall be confiscated and destroyed, under the direction of the court or magistrate; otherwise the same shall be forthwith returned to the person or persons from whom it was taken.

37. Penalty. [Sec. 5, ch. 257, laws of 1895.] Any person or persons violating any of the provisions or sections of this act shall be guilty of a misdemeanor and upon conviction thereof be fined not less than twenty-five nor more than fifty dollars for the first offense, and for each subsequent offense not less than fifty nor more than one hundred dollars, or be imprisoned in the county jail not less than thirty nor more than ninety days in the discretion of the court before whom such conviction may be had.

Sec. 6, ch. 257, laws of 1895, is repealed by ch. 189, 1897.

38. Sale of unwholesome milk, etc. [Sec. 1, ch. 94, laws of 1897.] The dairy and food commissioner or his agents,

shall have full access and ingress to all premises, buildings or dairies where milk is stored, produced or handled for the city milk trade, and is hereby empowered to enforce such measures as may be necessary to prevent the sale of milk from diseased cows or from cows fed upon unwholesome food, and to require cleanliness in all barns, stables, milk houses or buildings where milk is produced or stored for the city milk trade.

39. Food for dairy cows, etc. [Sec. 2, ch. 94, laws of 1897.] Any person or persons owning or managing a dairy, the product of which is sold as milk for family use, shall feed his cows upon wholesome food, keep them, when housed, in clean and comfortable stables, and handle the milk with clean utensils.

40 Penalty. [Sec. 3, ch. 94, laws of 1897.] Any person or persons violating any of the provisions of this act shall be deemed guilty of a misdemeanor and, upon conviction thereof, be fined not less than twenty-five nor more than one hundred dollars for the first offense, and not less than one hundred nor more than two hundred for each subsequent offense.

FRAUD IN DAIRY FACTORIES.

41. Penalty. [Sec. 1494a, R. S.] Any butter or cheese manufacturer who shall knowingly use, or allow any of his employes or any other person to use for his or their own individual benefit, any milk, or cream from the milk, brought to said butter or cheese manufacturer, without the consent of all the owners thereof, or any butter or cheese manufacturer who shall refuse or neglect to keep, or cause to be kept, a correct account (open to the inspection of any

one furnishing milk to such manufacturer) of the amount of milk daily received, or of the number of pounds of butter, and the number and aggregate weight of cheese made each day, or of the number cut or otherwise disposed of, and the weight of each, shall for each and every offense forfeit and pay a sum not less than twenty-five dollars, nor more than one hundred dollars, to be recovered in an action in any court of competent jurisdiction, one-half for the benefit of the person or persons, firm or association, or their assigns, upon whom such fraud or neglect shall be committed, first having made complaint therefor, the remainder to the school fund.

ADULTERATION OF FOOD, DRUGS, LIQUORS, ETC.

42. Sale of adulterated food or drug. [Sec. 1, ch. 166, laws of 1897.] No person, by himself, his servant or agent, or as the servant or agent of any other person, shall sell, exchange, deliver, or have in his possession with the intent to sell or exchange, or expose or offer for sale or exchange, any drug or article of food which is adulterated within the meaning of this act.

This and the two next following sections are modeled after paragraphs 8805-8807, R. S. of Ohio, 6th ed., first enacted in that state in 1884.

43. "Drug" and "food" defined. [Sec. 2, ch. 166, laws of 1897.] The term "drug," as used in this act, shall include all medicines for internal or external use, antiseptics, disinfectants and cosmetics. The term "food," as used herein, shall include all articles used for food or drink by man, whether simple, mixed or compound.

44. Adulteration, what is. [Sec. 3, ch. 166, laws of 1897.] An article shall be deemed to be adulterated within the meaning of this act:

(a) In the case of drugs: First, if, when sold under or by a name recognized in the United States Pharmacopoeia, it differs from the standard of strength, quality, or purity laid down in the latest current edition thereof; second, if, when sold under or by [a] name not recognized in the Pharmacopoeia, but which is found in the Pharmacopoeia of some other country, the national formulary or other standard work on materia medica, it differs materially from the standard of strength, quality or purity laid down in the latest current edition of such work; third, if its strength, quality or purity falls below the professed standard under which it is sold.

(b) In the case of food: First, if any substance or substances have been mixed with it, so as to lower or depreciate or injuriously affect its strength, quality or purity; second, if any inferior or cheaper substance or substances have been substituted wholly or in part for it; third, if any valuable or necessary ingredient has been wholly or in part abstracted from it; fourth, if it is an imitation of or is sold under the name of another article; fifth, if it consists wholly, or in part, of a diseased, infected, decomposed, putrid, tainted or rotten animal or vegetable substance or article, whether manufactured or not; sixth, if it is colored, coated, polished or powdered, whereby damage or inferiority is concealed, or if by any means it is made to appear better or of greater value than it really is; seventh, if it contains any added substance or ingredient which is poisonous, injurious or deleterious to health, or any deleterious substance not a necessary ingredient in its manufacture; provided, that the provisions of this act shall not apply to mixtures or compounds recognized as ordinary articles of food, if the same be distinctly labeled as mixtures or com-

pounds, and from which no necessary ingredient in its preparation is eliminated.

45. Canned food, how labeled. [Sec. 4, ch. 166, laws of 1897.] No person, by himself, his servant or agent or as the servant or agent of any other person, shall: First, pack, can or preserve fruits, vegetables or other articles of food; second, or sell, exchange, deliver or have in his possession with the intent to sell or exchange, or expose or offer for sale or exchange, such canned articles after January first, 1898, with the exception of goods bought from foreign countries, unless such articles be distinctly labeled with the grade or quality of the same, together with the name and address of the person, firm or corporation packing or canning or preserving the same, or the dealer who sells the same.

46. Baking powder containing alum, how labelled. [Sec. 5, ch. 166, laws of 1897.] No person, by himself, his servant or his agent or by the agent or servant of any other person, shall; First, make or manufacture baking powder or any mixture or compound intended for use as a baking powder; second, or sell, exchange, or deliver, or have in his possession with the intent to sell or exchange, or expose or offer for sale or exchange such baking powder, or any mixture or compound intended for use as a baking powder, which contains alum in any form or shape, unless the presence of the same be distinctly shown by a label on the outside and face of which is printed with black ink, in legible type, not smaller than brevier heavy gothic caps, the name and residence of the manufacturer and the following words: "This Baking Powder Contains Alum."

See note to paragraph 19.

47. Patent medicine containing poison, labeling of. [Sec. 6, ch. 166, laws of 1897.] No person by himself, his servant or agent, or as the servant or agent of any other person, shall sell, exchange, deliver, or have in his posses-

sion with the intent to sell or exchange, or expose or offer for sale or exchange, any medicine known as patent or proprietary, or of which the formula is kept secret by the manufacturer, which contains morphine, strychnine, cocaine, or poisonous or narcotic alkaloid or drug in any quantities which the state board of health shall deem harmful to the life or health of the public unless the presence of the same be distinctly shown by a label upon the bottle or package and upon the outer wrapper thereof.

48. Penalty. [Sec. 7, ch. 166, laws of 1897.] Whoever violates any of the provisions of this act shall be guilty of a misdemeanor, and, upon conviction, shall be fined not exceeding one hundred nor less than twenty-five dollars for each and every offense.

49. Repealing clause. [Sec. 8, ch. 166, laws of 1897.] Section 4, chapter 248, laws of 1879; sections 1, 2, 3, 4, 5 and 6, chapter 252, laws of 1880; section 5, chapter 40, laws of 1881; section 13, chapter 167, laws of 1882, as amended by section 11, chapter 227, laws of 1895, and all acts and parts of acts inconsistent with this act shall be and the same are hereby repealed.

50. When to be in effect. [Sec. 9, ch. 166, laws of 1897.] This act shall take effect and be in force from and after January 1, 1898.

51. Adulterated honey, marking of. [Sec. 2, ch. 40, laws of 1831.] Every person, company or corporation, who shall sell or offer for sale, honey or any imitation of honey, which is adulterated with glucose, or any other substance, shall mark the package or parcel with the words "adulterated honey," as required by section one of this act.

Section 1, of chapter 40, laws of 1881, related to the manufacture of imitation butter, and provided that each firkin, tub, package or parcel thereof, should be marked on top of same in letters not less than one-half inch in length, and breadth in proportion, and in such manner that it may be plainly seen. As applied to butter the said section was repealed by chapter 361, laws of 1885. Section 3 of the act of 1881, related to imitation cheese. It was also repealed by the act of 1885.

52. Penalty. [Sec. 3, ch. 40, laws of 1881.] Any person found guilty of any violation of this act, shall for each offense be punished by imprisonment in the county jail not less than ten days nor more than six months, or by a fine of not less than ten dollars nor more than one hundred dollars, or both, in the discretion of the court.

Sec. 5, ch. 40, 1881, was repealed by sec. 8, ch. 166, 1897.

53. Imittion cider vinegar. [Sec. 1, ch. 394, laws of 1891.] Every person who manufactures for sale, or offers or exposes for sale, as cider vinēgar, any vinegar not the legitimate product of pure apple juice, known as apple cider, or vinegar not made exclusively of said apple cider, or vinegar into which foreign substances, drugs or acids have been introduced, as may appear by proper tests, shall be deemed guilty of a misdemeanor.

54. Adding injurious ingredients to vinegar. [Sec. 2, ch. 394, laws of 1891.] Every person who manufactures for sale, or offers for sale, any vinegar, found, upon proper tests, to contain any preparation of lead, copper, sulphuric acid, or other ingredient injurious to health, shall be deemed guilty of a misdemeanor.

55. Adulteration and false labeling of vinegar. [Sec. 3, ch. 394, laws of 1891.] No person, by himself, his servant or agent, or as the servant or agent of any other person, shall sell, exchange, deliver, or have in his custody or possession, with intent to sell or exchange, or expose or offer for sale or exchange, any adulterated vinegar, nor shall he label, brand or sell as cider vinegar, or as apple vinegar, any vinegar not the legitimate product of pure apple juice, or not made exclusively from apple cider.

56. Standard of pure vinegar, marking of. [Sec. 4, ch. 394, laws of 1891.] All vinegar shall have an acidity equivalent to the presence of not less than four per cent. by weight, of absolute acetic acid, and, in the case of cider

vinegar, shall contain in addition not less than two per cent. by weight, of cider vinegar solids upon full evaporation over boiling water at 212°; and if any vinegar contains any artificial coloring matter injurious to health, or less than the above amount of acidity, or in the case of cider vinegar, if it contains less than the above amount of acidity or of cider vinegar solids, it shall be deemed adulterated within the meaning of this act. All manufacturers of vinegar in the state of Wisconsin, and all persons who reduce or re-barrel vinegar in this state, and all persons who handle vinegar in lots of one barrel or more, are hereby required to stencil or mark in black figures at least one inch in length on the head of each barrel of vinegar bought or sold by them, the standard strength of the vinegar contained in the package or barrel, which shall be denoted by the per centum of acetic acid. And any neglect so to mark or stencil each package or barrel, or any false markings of packages or barrels, shall be deemed a misdemeanor.

It is competent for the legislature to make it a misdemeanor to add artificial coloring matter to vinegar, regardless of whether the matter added is injurious to the health of the consumer or not. *People v. Girard*, 73 Hun, (N. Y.), 457.

57. Penalty for violation of law. [Sec. 5, ch. 349, laws of 1891.] Whoever violates any of the provisions of this act shall be deemed guilty of a misdemeanor and shall be punished by a fine not less than ten nor more than one hundred dollars and costs.

58. Sale of unwholesome provisions. [Sec. 4599, R. S.] Any person who shall knowingly sell any kind of diseased, corrupted or unwholesome provisions, whether for meat or drink, without making the same fully known to the buyer, shall be punished by imprisonment in the county jail not more than six months, or by fine not exceeding one hundred dollars.

59. Sale, etc., of flesh of diseased animals. [Ch. 431, laws of 1891.] Chapter 187 of the revised statutes is hereby amended by incorporating therein a section to be known as section 4607g of said revised statutes, and to read as follows: Section 4607g. It shall be unlawful for any person to sell or expose for sale, or to give away for the purpose of food, or to can or pack for the purpose of transportation and sale to other markets any unwholesome, stale, emaciated, blown, tainted, putrid or measly meat or the flesh of any diseased animal or of any animal that shall not have been slaughtered for the purpose of food, knowing or having good reason to believe that such meat is unwholesome, stale, emaciated, blown, tainted, putrid or measly, or that such flesh is the flesh of a diseased animal or of an animal that shall not have been slaughtered for the purpose of food. It shall be unlawful for any person or corporation owning or operating any slaughter house or packing establishment within the state of Wisconsin, to receive for the purpose of killing or to kill any diseased animal, or to render the carcass of any animal that shall have died by disease or through exposure, or that shall not have been butchered for food, knowing or having good reason to believe that such animal or animals were diseased or had died from disease or exposure, or that the same shall not have been butchered for food. Any person found guilty of any violation of this act, shall for each offense be punished by imprisonment in the county jail not less than ten days nor more than six months, or pay a fine of not less than ten dollars nor more than one hundred dollars, or both in the discretion of the court.

60. Coloring grain. [Sec. 4606, R. S.] Any person who shall fumigate any barley, wheat, or other grain, by the use of sulphur or other substance, or shall in any way or by the use of any chemical, material or process, **affect** the color or healthfulness of such grain, or who shall sell or offer for sale any such grain, knowing that the same

has been so fumigated, or the color or healthfulness thereof so affected, shall be punished by imprisonment in the county jail not more than one month, or by fine not exceeding fifty dollars.

Affect the color. See note to paragraph 56.

REPORT OF THE COMMISSIONER.

The work of the dairy and food commission for the two years ending September 30, 1898, has comprised an examination of a considerable portion of the factories and creameries of the state, an inspection of dairies producing milk for city consumption, the education of manufacturers, wholesale and retail dealers in food products as to the meaning of the pure food law of 1897, and the prosecution of violators of the dairy and food laws of the state.

There has always been a strong sentiment in Wisconsin in behalf of legislation designed to secure purity in food products. That sentiment has been greatly strengthened in recent years. Legislation against imitation of dairy products has been of great value to the dairy and agricultural interests of the state as well as to the general consumer of milk, butter and cheese. The friends of the dairy interest have not at any time demanded unreasonable legislation in their own behalf. Neither have they asked for an unreasonable interpretation of existing laws. They have made no effort, as has been charged, to strike down any legitimate competing interest. The laws against the manufacture and sale of impure milk, of filled cheese, and of butterine have been founded upon broad principles of public policy. Their primary purpose is to protect consumers of dairy products from the imposition of counterfeits and frauds.

The law of 1895, prohibiting the manufacture of filled cheese, has obliterated the filled cheese industry in this state.

The law requiring the peculiar form of ten inches in diameter and nine inches in height for skim cheese has very nearly stopped the manufacture of that article.

The cheese product of Wisconsin to-day is superior to that of any other period in the history of the industry. The state could not properly prohibit the manufacture of skim cheese, which is in itself a legitimate article. But as long as it was manufactured

and sold in many instances for full cream cheese, it had an unquestioned right to throw such restrictions about its manufacture and sale as would protect the public from impositions of this kind. The result of this legislation has been to make full cream cheese constitute almost the entire product of the state.

Very little Wisconsin cheese is now shipped to European markets. For the last two years the domestic demand has been constantly increasing. At least three-fourths of the cheddar cheese manufactured in this state is sent into the southern states.

A marked change has taken place in factory management. Buildings and utensils are kept more scrupulously clean. Cheese makers are more generally becoming students of their business rather than imitators of their predecessors. The Dairy School of the State University is bringing into the business a constantly increasing number of trained experts in cheese making. The influence of the Farmers' Institutes and of the dairy press, of the State Dairymen's Association, and of the Agricultural College, is giving us cheese makers who know their business, who like it, and who are on the alert to catch any idea which may be of value in securing economy in the manufacture of cheese, perfection in curing it, and intelligence in its sale.

A. D. DeLand of Sheboygan, who has been familiar with the cheese industry of Wisconsin from its inception to the present time both as a manufacturer and wholesale dealer, and who handles millions of pounds of Wisconsin cheese annually, says that the cheese of 1898 produced in this state has never been equalled in quality. The correctness of this statement is emphasized by the fact that Wisconsin cheese is bringing one and one-half cents more per pound than in 1896, and that the demand is far in excess of the supply.

A large amount of Swiss, Limburger and similar forms of cheese is manufactured in the counties of the southern part of the state, the bulk of it being manufactured in Green county. Shipments from Green county in 1898 will reach ten million pounds, and the total product of the state is undoubtedly over fifteen million pounds.

While there has been great improvement in cheese making in Wisconsin, we are a long way from perfection. The inspectors

of this department and the cheese instructors sent out by the State Dairymen's Association and by the Agricultural College find many factories where uncleanness and disorder evince careless or incompetent management.

Wisconsin produces more than one-fourth of the entire cheese product of the United States. Good climate and accessibility to the southern markets give her great natural advantages. The progress made during the last two years has been such that at the present time the best Wisconsin cheese is selling in the markets of this country on a par with the best products of New York and Canada. Improvement in the character of the American cheese product will carry with it an increased domestic demand, and rapidly tend to restore our former position in the European markets.

The state of Wisconsin has been wise in protecting this great industry from fraudulent competition, and by generous appropriations to the State Dairymen's Association and to the Dairy School at the State University for educational purposes.

The consumption of cheese in this country is only about three pounds annually per capita. A pound of cheese costs less than a pound of meat and has more than double its nutritive value. A work of education should be carried on by the friends of the dairy interest, not only for the purpose of producing a palatable and digestible cheese, but in educating the public to use it as a staple food of great economic value. The time has come when this kind of education can be made effective. We can urge people to eat cheese with the enthusiasm born of conviction when we offer them cheese which is fit to eat. It will be wise policy on the part of the state, in addition to the excellent legislation already upon our statute books affecting this industry, to add to the dairy commission a force large enough to give rigid inspection to every cheese factory in the state, and enforce such sanitary regulations as will secure cleanliness and healthfulness of the product.

BUTTER.

The butter product of Wisconsin for 1898 will reach nearly 80,000,000 pounds, and will have a value of nearly \$13,000,000. The counties of Columbia, Dane, Dodge, Fond du Lac, Grant, Green, Iowa, Jefferson, Kenosha, La Crosse, LaFayette, Manitowoc, Monroe, Outagamie, Pierce, Racine, Richland, Rock, Eau Claire, Trempealeau, Vernon, Walworth, Washington, Waukesha, Waupaca, and Winnebago produce over a million pounds each. Dane heads the list with a butter production of nearly 6,000,000, pounds, and Walworth follows with the production of 5,500,000.

Creameries dot all the great agricultural counties of the state in close proximity. No comprehensive and correct list of them has ever been made. The list published in the last biennial report of this department embraced 951 creameries. This list was obtained by taking the reports of the census enumerators and by correspondence with every post master in the state. It was expected that through these means the name and post office address of each creamery could be ascertained, but it was found that a considerable number of mistakes were made by the enumerators and not all of them were corrected by correspondence with the post masters. For the purpose of obtaining a more perfect list, this department sent return postal cards to every creamery and factory upon the original list requesting their name and address, and also the addresses and names of creameries and factories recently established. There were sent out 2,650 of these postal cards, and only 750 replies were received. The list published in this report is substantially correct so far as it goes, but it does not embrace all the factories and creameries of the state.

Seventy-five per cent. at least of the Wisconsin creameries are now operated upon the co-operative plan. The average quality of the butter product of the state is improving, owing to the same influences which have changed the character of our cheese production. The rapid increase in butter production in all the great agricultural states of the west has had its effect upon prices, and the Wisconsin butter maker is compelled to accept each year a slightly diminished average price. The net profits of the busi-

ness, however, have not been diminished, because of the general increase in knowledge of the dairy business, because the standard of dairy stock is steadily being improved, because dairy cattle are receiving better care, and because there is more widespread information about economical feeding and the manufacture of the butter product.

OLEOMARGARINE.

The great competitor of butter, oleomargarine, has had a more restricted field during the last two years. The law of 1895, which prohibited the sale of oleomargarine and similar compound when made in imitation of yellow butter, has been effective in reducing the number of licensed dealers in oleomargarine in this state and in greatly diminishing the total sales of that article.

The report of prosecutions under the oleomargarine law in the last biennial report of this department was mainly composed of violations by retail dealers of the anti-coloring law. During the past two years we have had 11 oleomargarine cases, but mainly against hotel, boarding-house and restaurant keepers. In every case the law has been upheld by the lower courts, and no appeal has been made to the supreme court of the state. Recent decisions of the United States supreme court, declaring unconstitutional the law of Pennsylvania, which prohibits without qualification the manufacture and sale of oleomargarine, and the law of New Hampshire, which requires oleomargarine and similar compounds to be colored pink, have given new life and aggressiveness to the manufacturers of and dealers in this article. The misapprehension which seemed to exist upon the part of the metropolitan press of the country has added to this feeling and given to the public the widespread belief that the laws of Illinois, Massachusetts and Wisconsin, which were drawn upon the same lines, had also been nullified by the decisions referred to.

The oleomargarine law of Wisconsin is not a prohibitory law. It explicitly permits the sale of oleomargarine, when sold under its own name and color. The constitutionality of the Wisconsin statute was not in question in the New Hampshire and Pennsylvania cases. The oleomargarine law of Massachusetts, upon

which the Wisconsin anti-coloring act was based, was passed upon by the Supreme Court of the United States in the Plumley case, which was carried up from the state of Massachusetts and a sweeping decision rendered by Justice Harlan, affirming the constitutionality of the Massachusetts law and declaring it to be a proper exercise of the police powers of a state to prevent the manufacture and sale of counterfeit food products.

In the first cases brought under the anti-coloring act of 1895, the state was successful and an appeal was made by the defendants to the Supreme Court. It is to be regretted that this appeal was afterward withdrawn, the defendants evidently anticipating an adverse decision. The friends of the law would have been well satisfied to have had its constitutionality passed upon by the highest court in the state. Without presuming to determine what a supreme court decision would be, the assumption is reasonable that the law would have been upheld, as it has been in every court of every state where a similar law has been in force.

The enforcement of the law has greatly diminished the sales of oleomargarine in this state, and has made it impossible for the Chicago manufacturers to market their goods in Wisconsin in any considerable quantities through retail dealers.

A device for avoiding the law has been adopted by the Chicago manufacturers and dealers to retain a portion of their trade. It consists in the selection of local agents who take orders from consumers, to whom the goods are shipped direct. As it is not an offense to buy oleomargarine, and as the sale is made outside of the state, it is not possible under the present law to reach these cases. Additional legislation is needed which shall provide that when any person takes orders for oleomargarine to be supplied by parties within or without the state, such person shall be deemed a retail dealer under the oleomargarine act. No other amendments have been suggested by the experience of this department in enforcing the law during the last three years. No flaw has been discovered in the court proceedings of that period. The only way in which the law could be made more effective would be by an addition to the number of inspectors now authorized by law.

It is possible with the present force of the department to

determine whether or not licensed dealers in oleomargarine in the state are complying with the law, but it is not possible to send inspectors to the boarding houses, restaurants and cheap hotels scattered all over Wisconsin, which are using it upon their tables as butter and selling it to their boarders as butter. In these cases the fraud committed upon the final consumers is as great as that which can be perpetrated by a retail dealer. In all classes of hotels and boarding-houses, from the most expensive to the one which sells a meal for ten cents, there is not one customer in one hundred who will call for or desire to eat butterine. In these places when it is consumed, it is almost invariably in response to a call for butter, and purchased and eaten as butter.

The law is primarily intended to protect, and does protect, the purchaser of dairy products from the imposition of a counterfeit. Incidentally it removes, or tends to remove from the butter markets of the country a dishonest and dangerous competitor of a better and more costly product, which is the result of honest labor and skill. The law was wisely framed, and it is gratifying to know that it has not only been sustained by the courts of the state, but by general public sentiment.

DAIRY INSPECTION.

The legislature of 1897 created the office of Dairy Inspector. The compensation of this officer was fixed at \$3 per day for actual service and expenses. The appointment rests in the hands of the Dairy and Food Commissioner, with the approval of the Governor. Norton J. Field, of Milwaukee, was appointed to the position. The office was created mainly for the purpose of securing an assistant in the food and dairy department who could devote a portion of his time to the inspection of dairies furnishing milk for the city milk trade. The condition of a considerable portion of the milk dairies in the vicinity of the larger cities, and notably of Milwaukee, was such as to prejudice the public health and warrant the state in making official examinations. During the winter of 1898 Mr. Field inspected 200 dairies in the city and vicinity of Milwaukee. A very considerable percentage of these dairies were found to be in a most filthy condition. Cows were

being kept in close, poorly-ventilated, filthy stables, with little light, no regard for order or cleanliness, and fed in some instances exclusively upon distillery slops. Some dairies were found where the cows had little or no exercise, were never cleaned, and were simply walking monuments of filth. The law requires that cows kept for the purpose of producing milk for the city milk trade shall be kept in a clean and wholesome condition. The offending dairymen were all notified of the fact that they were violating the law, instructed to clean up, and some of them were prosecuted and convicted. Such convictions and warnings have had a wholesome effect. There is a marked change in the character of the milk supply which has taken place during the past two years.

All efforts of this department have been vigorously supplemented by the health department of Milwaukee. The dairy inspector reports that almost without exception the offending dairymen have heeded his warnings and manifested an earnest desire to comply with the law. Milwaukee has not only obtained cleaner and more healthful milk, but milk of a better character than ever before. An examination was recently made by this department of samples of milk taken from over 100 milk wagons in that city, and only one of the samples fell below the legal standard. In 1897 an examination of samples taken from 200 wagons indicated that the milk supply of Milwaukee was either adulterated or skimmed to the extent of 16 per cent. The work of dairy inspection is important and should be extended by the appointment of an additional inspector whenever state finances will permit.

THE PURE FOOD LAW.

The only comprehensive general pure food law ever enacted in Wisconsin was passed by the legislature of 1897. The laws relating to the sale of adulterated dairy products were made reasonably stringent before that time. The only law under which the Dairy and Food commission could prosecute dealers in adulterated food products, other than those of the dairy, was the law of 1879, which prohibited the false labeling of these products and provided for the prosecution of parties who knowingly violated

the law. As it is practically impossible to prove the matter of intent, the law was a dead letter, and the work of adulteration went on without let or hindrance by the state. The present law as passed embodies the main features of the pure food law now in force in Ohio, Massachusetts and other states, and which have been incorporated in the various pure food bills which have been presented to the attention of congress.

While the majority of the adulterations common in food products have not been injurious to the public health, all of them have taken money from the public pocket. Adulterations had become so common and widespread in many articles of food that it was deemed impossible by many sincere men in the grocery trade to eradicate them by any law that could be devised.

The most common violations of the pure food law have been the sale of low wine vinegars for cider vinegars, of glucose syrups for cane syrups, of wheat middlings and low grade wheat flour for buckwheat flour, of lemon and vanilla extracts containing no lemon or vanilla, of artificial jellies for pure fruit jellies, of all manner of adulterated spices for pure spices, of prepared meats containing chemicals injurious to the public health, of coffee essence which does not exist, of cottolene sold for pure lard, of coffee and chicory sold for pure coffee, of imported canned vegetables colored or treated with poisonous chemicals, of alum baking powders sold for cream of tartar, baking powders, and of pure honey adulterated with glucose.

The law of 1897 provided that it should not become operative until January 1st, 1898, the purpose of delay being that the grocers of the state might become informed of the provisions of the law and prepare themselves to meet its requirements. This delay in enforcement did not accomplish its purpose. Men seldom inquire about a law until it begins to press upon them and no general inquiry was aroused until the law took effect. On January 8th, 1898, for the purpose of informing the trade with reference to this legislation which so materially affected them, this department sent out the following circular and warning:

MADISON, WIS., January 8, 1898.

To the Manufacturers and Dealers in Foods and Drugs in Wisconsin:

The pure food law passed by the legislature of 1897 became operative under its provisions January 1st, 1898. At the request of the officers of the Wholesale Grocers' Association of the state, and for the information of the trade generally, this department has interpreted the law to the extent of the rulings printed herewith. Specific lists of brands of pure or adulterated articles will not be sent out by this office, as such lists would be used for advertising purposes. No list of alum baking powder will be issued by this department for the same reason. The retailers must find their protection in the guarantees of reliable jobbers or manufacturers that the goods purchased are made and labeled in accordance with the law. It will not be possible for the chemist of the commission to analyze and report the character of samples of food products sent to us, unless such analysis is desired for the purpose of prosecution, if proof be found that the articles so submitted are sold in violation of law.

The dairy and food commissioner is authorized by law to employ only one chemist, and if all samples sent him for analysis by individuals should be analyzed and reported upon, he would have no time to analyze the samples taken by our inspectors, or to appear in court proceedings as a witness for the state. Retailers of canned goods should comply with the law requiring such goods to be labeled with the name and address of the manufacturer or the retailer. A large correspondence with retailers, jobbers and manufacturers indicates clearly the general desire of the trade to comply with the law. It is also backed by a strong public sentiment in behalf of pure food products. This department which to a considerable extent is entrusted with the execution of the law, will endeavor to make it effective because it is the law, because it is based upon sound principles of public policy, and because it has the endorsement of public judgment. The wholesale adulteration of foods has been a great evil, injurious to reputable dealers and the public alike. It cannot be stopped in a day. But gradually, as the dealers in food products become acquainted with the meaning of the law, they will be held responsible for a compliance with its provisions.

H. C. ADAMS,

Dairy and Food Commissioner.

LAW PROHIBITING THE ADULTERATION OF FOOD AND DRUGS.

TAKING EFFECT JANUARY 1ST, 1898.

Sale of adulterated food or drug. [Sec. 1, ch. 166, laws of 1897.] No person, by himself, his servant or agent, or as the servant or agent of any other person, shall sell, exchange, deliver or have in his possession with intent to sell or exchange, or expose or offer for sale or exchange, any drug or article of food which is adulterated within the meaning of this act.

“Drug” and “food” defined. [Sec. 2, ch. 166, laws of 1897.] The term “drug,” as used in this act, shall include all medicines for internal or external use, antiseptics, disinfectants and cosmetics. The term “food” as used herein, shall include all articles used for food or drink by man, whether simple, mixed or compound.

Adulteration, what is. [Sec. 3, ch. 166, laws of 1897.] An article shall be deemed to be adulterated within the meaning of this act:

(a) In the case of drugs: First, if, when sold under or by a name recognized in the United States Pharmacopoeia, it differs from the standard of strength, quality or purity, laid down in the latest current edition thereof; second, if, when sold under or by [a] name not recognized in the Pharmacopoeia, but which is found in the Pharmacopoeia of some other country, the National Formulary or other standard work on materia medica, it differs materially from the standard of strength, quality or purity laid down in the latest current edition of such work; third, if its strength, quality, or purity falls below the professed standard under which it is sold.

(b) In the case of food. First, if any substance or substances have been strength, mixed with it, so as to lower or depreciate or injuriously affect its quality or purity; second, if any cheaper or inferior substance or substances have been substituted wholly or in part for it; third, if any valuable or necessary ingredient has been wholly or in part abstracted from it; fourth, if it is an imitation of or is sold under the name of another article; fifth, if it consists wholly, or in part, of a diseased, infected, decomposed, putrid, tainted or rotten animal or vegetable substance or article, whether manufactured or not; sixth, if it is colored, coated, polished or powdered, whereby damage or inferiority is concealed, or if by any means it is made to appear better, or of greater value than it really is; seventh, if it contains any added substance or ingredient which is poisonous, injurious or deleterious to health, or any deleterious substance not a necessary ingredient in its manufacture; provided, that the provisions of this act shall not apply to mixtures or compounds recognized as ordinary articles of food; if the same be distinctly labeled as mixtures or compounds, and from which no necessary ingredient in its preparation is eliminated.

Baking powder containing alum, how labeled. [Sec. 5, ch. 166, laws of 1897.] No person, by himself, his servant or his agent or by the agent or servant of any other person, shall: First, make or manufacture baking powder or any mixture or compound intended for use as a baking powder; second, or sell, exchange, or deliver, or have in his possession with the intent to sell or exchange; or expose or offer for sale or exchange such baking powder, or any mixture or compound intended for use as a baking powder, which contains alum in any form or shape, unless the presence be distinctly shown by a label on the outside and face of which is printed with black ink, in legible type, not smaller than brevier heavy

gothic caps, the name and residence of the manufacturer and the following words:

“THIS BAKING POWDER CONTAINS ALUM.”

Canned food, how labeled. [Sec. 4, ch. 163, laws of 1897.] No person by himself, his servant or agent or as the servant or agent of any other person, shall: First pack, can or preserve fruits, vegetables or other articles of food; second, or sell, exchange, deliver or have in his possession with the intent to sell or exchange, or expose or offer for sale or exchange, such canned articles after January first, 1898, with the exception of goods bought from foreign countries, unless such articles be distinctly labeled with the grade or quality of the same, together with the name and address of the person, firm or corporation packing or canning or preserving the same, or the dealer who sells the same.

Patent medicine containing poison, labeling of. [Sec. 6, ch. 166, laws of 1897.] No person by himself, his servant or agent, or as the servant or agent of any other person, shall sell, exchange, deliver or have in his possession with the intent to sell or exchange or expose or offer for sale or exchange, any medicine known as patent or proprietary, or of which the formula is kept secret by the manufacturer; which contains morphine, strychnine, cocaine, or poisonous or narcotic alkaloid or drug in any quantities which the State Board of Health shall deem harmful to the life or health of the public, unless the presence of the same be distinctly shown by label upon the bottle or package and upon the outer wrapper thereof.

Penalty. [Sec. 7, ch. 166, laws of 1897.] Whoever violates any of the provisions of this act shall be guilty of a misdemeanor, and upon any conviction shall be fined not exceeding one hundred nor less than twenty-five dollars for each and every offense.

Repealing clause. [Sec. 8, ch. 166, laws of 1897.] Section 4, chapter 248, laws of 1879; sections 1, 2, 3, 4, 5 and 6, chapter 252, laws of 1880; section 5, chapter 40, laws of 1881; section 13, chapter 167, laws of 1882, as amended by section 11, chapter 227, laws of 1895, and all acts and parts of acts inconsistent with this act shall be and the same are hereby repealed.

When to be in effect. [Sec. 9, ch. 166, laws of 1897] This act shall take effect and be in force from and after January 1, 1898.

In addition to this, a number of rulings were made by this department for the purpose of giving the grocers a better understanding of the law. It was definitely stated at the time that the rulings were not final, and that they were subject to such changes as a further examination and trial of the law should make necessary. The Dairy and Food Commissioner met representatives of the Wholesale Grocers' Association, of Milwaukee, in compliance

with their invitation, on several occasions, and discussed with them the character of the law and the interpretation which should be placed upon it. This association passed formal resolutions declaring itself in full sympathy with the purposes of the act, and the members individually, to a very large extent, declared their purpose of supporting it in every reasonable way. Ten thousand circulars were scattered over the state. Copies of the law were sent to all the daily papers of the state, and a vigorous effort made to give it proper publicity. The law not only prohibited the adulteration of foods, giving to the word "food" the sweeping definition of meaning every article of food or drink used by man; it also provided that all packages of alum baking powder should be labeled, "This baking powder contains alum." It further provided that all canned goods offered for sale should be labeled with the date of their manufacture and the address of the manufacturer or the retail dealer.

The law further provided for the examination of patent medicines and required that, whenever, in the judgment of the State Board of Health, any patent medicine should contain poison in a quantity sufficient to be injurious to the public health, such medicine should be labeled "This mixture contains poison."

With the shelves of jobbers and manufacturers containing large quantities of adulterated goods, and merchants all over the state being stocked with the goods to a greater or less extent, it was deemed inexpedient to undertake a rigid and universal enforcement of the law, until the dealers in food products in the state who were sincere in their desire to comply with it should be informed of its provisions and have a reasonable time in which to adjust their business to the new order of things. In the beginning, manufacturers of alum baking powders insisted that the law relating to their product was unconstitutional; that they would not obey it, but would fight it in every court in the state. This programme has not been carried out. On the contrary, manufacturers and jobbers have manifested a marked activity in supplying their trade with the necessary labels, and it is estimated that within three months after the law went into effect over 100,000 baking-powder labels had been placed upon packages of that article in this state.

The manufacturers of alum baking powders have presented to

this department a formidable array of authorities maintaining the healthfulness of their product, and urging that, as it was a wholesome product, the requirements of the law were unjust and should be disregarded. The question of the wholesomeness of alum baking powders has not been considered by this department. The legislature of the state required that they should be labeled. The requirement was not made to protect the public health, but to advise consumers of the character of the article purchased and so prevent fraud. The practice had been common in many communities to sell the cheap alum baking powders for and as the most costly cream of tartar powders.

The state has been successful in all the cases brought under the pure-food law, with one exception. In one case the defendant was able to escape conviction by committing rank perjury. The pure-food law has undoubtedly reduced the sales of adulterated foods in this state fifty per cent. As the dealers in food products become better informed as to the meaning of the law, its provisions will be more rigidly enforced, and Wisconsin will finally be made a state where honest food products shall dominate the markets.

FACTORY AND CREAMERY INSPECTION.

Nearly all of the time of the Assistant Dairy Commissioner, W. W. Chadwick, has been taken up in response to calls from managers of creameries and factories desiring that the milk of their patrons be tested. These requests have been less numerous during the last year. This line of work carried on by this department during the preceding years, coupled with the vigorous prosecutions of offenders against the law, has materially reduced the number of patrons of creameries and factories who deliver milk below the legal standard. The almost universal use at the present time of the Babcock tester in factories, as well as creameries, makes it also possible for the managers of these concerns to know what kind of milk they get.

The general condition of creameries and factories, so far as cleanliness and methods of management are concerned, has been greatly improved, but a considerable number of them are still open to severe criticism. Great good could be accom-

plished if the force at the disposal of this department were sufficient to inspect every factory and creamery in the state each year, and compel, by the strong arm of the law, the best sanitary regulations, and suggest through instruction the best possible management. If this work could be thoroughly done, the butter and cheese products of Wisconsin would be placed, in quality, where they would find no dangerous competition either in American or European markets.

COURT PROCEEDINGS.

In all the cases brought by this department during the last two years in behalf of the state, not one has been compromised. No effort has been made to secure success for the sake of success in any of these cases, unless the evidence warranted fully the conviction of the defendant. In every instance of prosecution the case for the state has rested and depended upon the testimony of the chemist of this department, Mr. A. S. Mitchell. The chemical tests made by him have never been impeached in the judgment of court or jury by opposing expert testimony.

This department has found Wisconsin courts good places in which to try violators of pure-food laws. They have been found above the reach of personal and local considerations, and alive to the necessity of sustaining those laws which protect health and which tend to secure honesty in trade.

REPORT OF THE CHEMIST.

MILK.

Since the publication of the last report of this department, few important discoveries have been made in the chemistry of milk.

Galactase.

The most important scientific discovery relative to the composition of milk is perhaps the discovery of an enzyme normal in milk and having digestive properties similar to trypsin of the pancreatic juice. The original article was published by Drs. Babcock and Russell in the proceedings of the Agricultural Experiment Station, University of Wisconsin, for 1897. Since that report further work has been done confirming the presence of the enzyme, galactase, and determining the relative amounts present in cow's milk during the various periods of lactation. Experiments have also been made showing its presence in the milk of other mammalia all of which have been published in the report of this experiment station for 1898.

Milk sugar
manufactured.

The increased production of milk sugar in the United States has greatly lessened its cost and increased its demand, with the result that the Swiss and foreign product has been almost excluded from this country. Many factories are in successful operation in the eastern states and one in Illinois.

Casein
utilized.

The demand for casein obtained from skimmed milk and used in the sizing of paper is greatly on the increase, and bids fair to become a large and important industry. Many of the newer and better class of books are printed on paper so sized.

Puffy cheese.

Many calls have come to this department from cheese-makers who are troubled with "puffy cheese," due to filthy milk or milk improperly cared for. As this department has principally to do with the enforcement of the laws with reference to the adulteration of dairy products and food and drugs, the inspectors are unable to make the tests required to locate the milk giving the trouble.

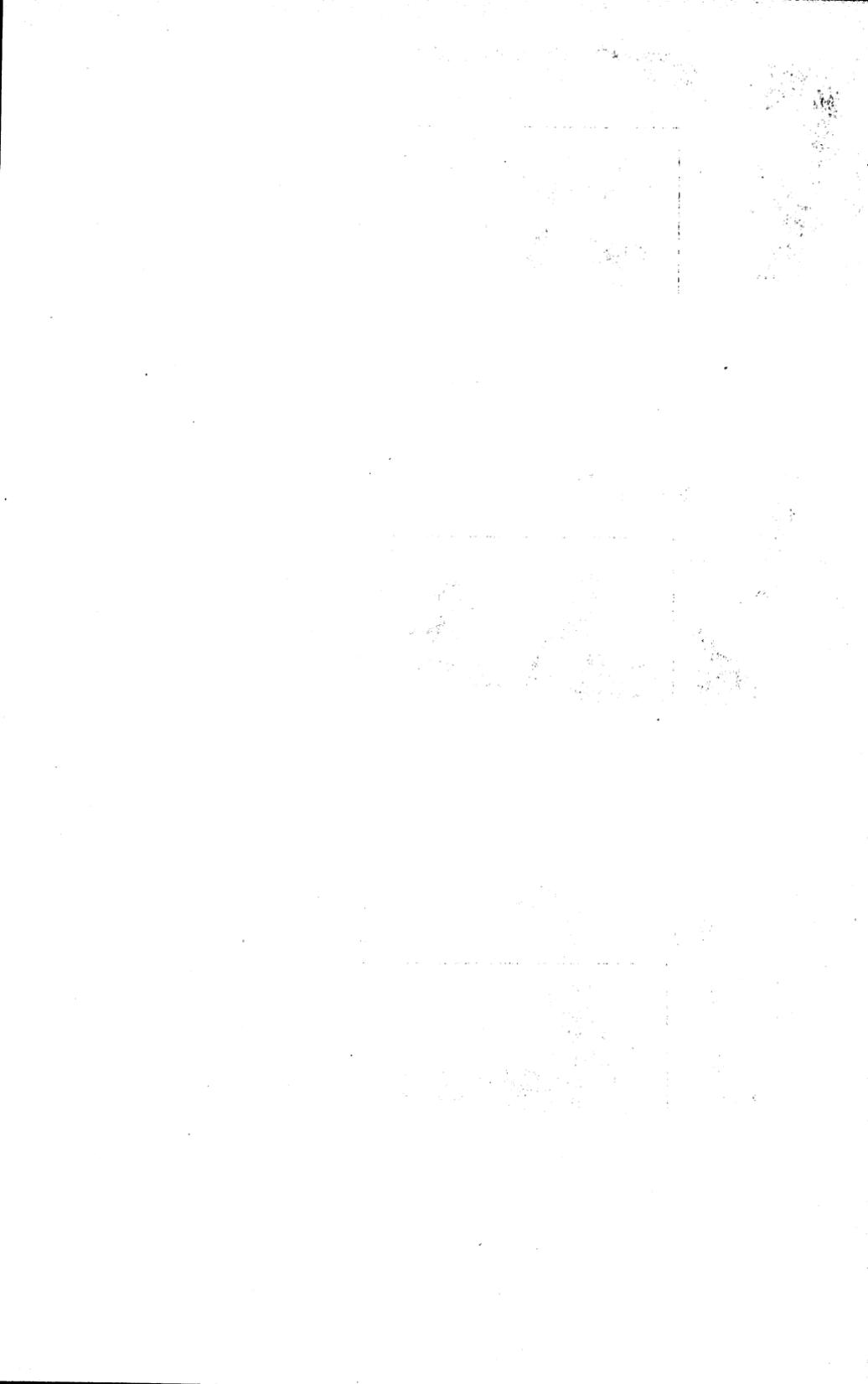




FIG. 7.—Curd from a good milk. Large irregular holes mechanical.



FIG. 8.—Curd from a bad milk. Large irregular holes mechanical, small pin holes due to gas.



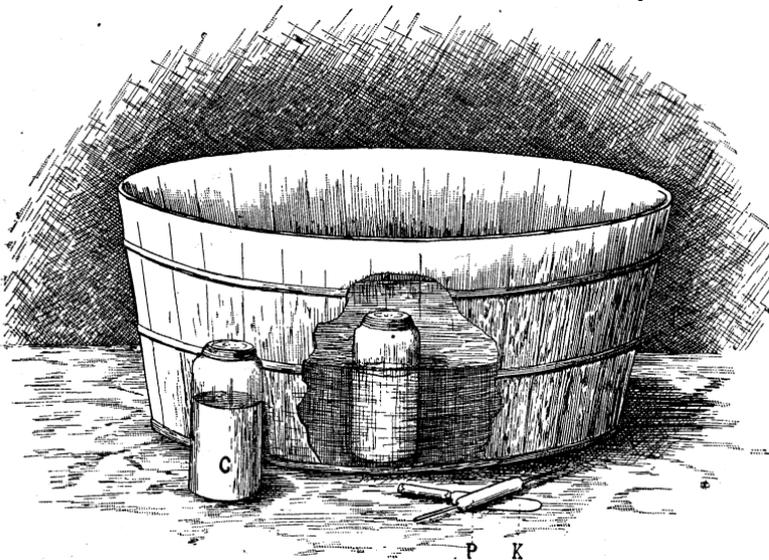
FIG. 9.—Floating curd from a very bad milk. Condition reached by further development of fig. 8, or a greater number of gas-producing bacteria.

Detection of
tainted milk.

Directions for making this test are given under "Improved Curd Test," in bulletin No. 67, published by the Agricultural Experiment Station, University of Wisconsin, entitled "Factory Tests for Milk." These directions are also given in perhaps more concise form in the manual entitled "Testing Milk and Its Products," by Farrington & Woll. This work describes many other tests of value to dairymen, cheese and butter makers. For the convenience of cheesemakers, that portion of the bulletin referring to the curd test is here inserted in abridged form.

WISCONSIN CURD TEST.

An improvement over the ordinary fermentation test is the preparation of a curd test or the making of a small pat of curd out of each patron's milk. In this the conditions of the test more closely approximate those that occur when the milk is made into cheese. The test as here described originated at the Wisconsin Dairy School in 1895, and is known as the Wisconsin Curd Test.



Improved curd test. C, cans used to hold samples; P, pipette for measuring rennet; K, knife for breaking curd.

A method based on the same principle, although executed in a different manner, has been used in Switzerland during the last few years.

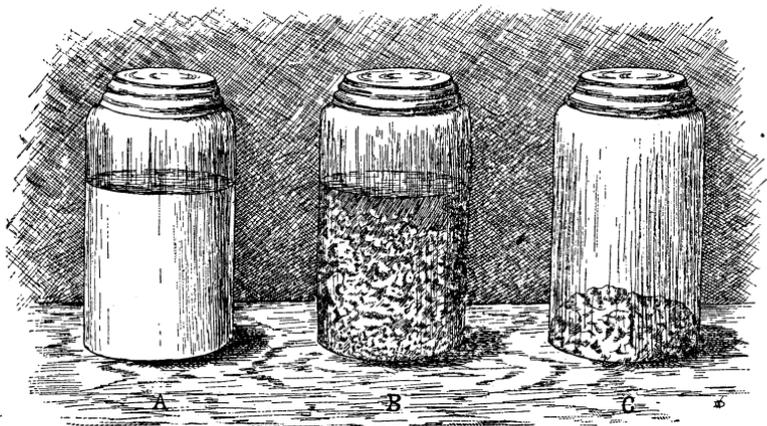
The advantages of this curd test over the earlier fermentation tests are as follows:

1. That the curd prepared from individual samples of milk more closely conforms to cheese conditions, thereby permitting a more accurate determination of the value of milk for cheese.

2. The development of gas and the relative amount of the same can be more easily traced in the curd than in the milk.

3. The removal of the milk serum with its abundance of fermentable sugar renders a more accurate test possible.

4. The detection of odors in milk that has been tainted by direct absorption is rendered possible.



Showing different stages of test. A, milk; B, broken curd in whey; C, matted curd.

A study of different milks by this test shows that almost all samples contain slight evidences of gas, if kept under conditions unfavorable for the keeping of milk, as is the case in the test.

During the heated season, the conditions are more favorable for the rapid development of these bacteria, and therefore, "gassy" fermentations are more troublesome in the summer months. A study of different herd milks for a considerable period of time shows, as might be expected, that this condition is not abso-

lutely constant, but nevertheless, the presence of bad taints in certain milks has been found to be surprisingly uniform. In some herds the milk is so carelessly received and handled that gas-forming bacteria are almost a constant accompaniment; in others, the undesirable condition is transitory, some days gas appearing in quantities, to be followed by a period of comparative freedom from taints. In such cases the difficulty is temporary, the climatic conditions often being the deciding factor. In still other cases the herd milks are always free from any suspicion of taint. These represent in general the patrons that exercise the greatest care in their treatment of the milk. In case the curds are kept for 24-36 hours some gas will appear in even the very best milk, as gas-producing organisms are present to some extent under the most favorable circumstances. In general, however, a tainted or defective condition, as revealed by the curd test, is usually traceable to the introduction of foreign matter such as filth, dirt or dust.

It not infrequently happens that a tainted condition may appear in the curd that is not associated with the production of gas. In some cases this arises from direct absorption of undesirable odors, either from the animal herself or from exposure after milking. It is a current belief that milk will not absorb odors when it is warmer than the surrounding air, but such an hypothesis has been experimentally determined by one of us (R.*) to be erroneous.

Leaving the warm milk in the stable, even for a limited time, where obnoxious odors are almost always present, is detrimental, as it gives an opportunity for the direct absorption of taints. Taints of this sort are not very prominent in the curd test, yet they can frequently be detected, as they are retained in the milk and are more readily perceived when the milk is warm.

It frequently happens that digesting bacteria that dissolve the casein without the production of gas may also be present. In such cases, the casein passes partially into solution, and is lost in the whey. The taints caused by this class of organisms are peculiarly offensive. Milks that contain such bacteria in any considerable numbers give a materially diminished

*Unpublished data.

Report of the Wisconsin

yield of cheese, and illustrate the unfairness of the guarantee principle that demands that a maker should make a pound of cheese from a certain quantity of milk regardless of conditions.

IMPROVISED CURD TEST.

The apparatus for the Wisconsin Curd Test resembles in some respects the Gerber apparatus. A home-made test can be improvised that will give good results, but we would advise the use of one of the perfected tests as it is more convenient.

The apparatus for the test consists of a wash tub (see Fig. 2) that is half filled with warm water, a set of pint fruit jars (C) for the different samples, a pipette (p) for measuring the rennet, and a case knife (k) for breaking the curd.

HOW TO MAKE A TEST.

To make a test, fill a jar half full of milk. Set samples in the tub and fill the same half full of warm water. Usually water at 115° F. will raise the temperature of the milk to the desired point, viz., 98°. If the milk is very cold care should be taken not to use too hot water to prevent cracking the jars.

When the temperature of the milk reaches 98° F., add to each sample by means of a pipette, ten drops of rennet extract and mix thoroughly. Allow the jars to remain undisturbed until milk is curdled, then break the curd into small particles by stirring with a case knife, in order to better expel the whey. In using thermometers for taking temperatures, or knife for cutting the curds, care should be taken to rinse after using in each sample so as to prevent the transference of many organisms from one sample to another.

The whey should be poured off as soon as the curd settles to the bottom, this process being repeated at frequent intervals until the curd mats into a solid mass. This expels the excess of whey which contains the fermentable sugar, thereby simulating cheese conditions more closely. The temperature of the surrounding water should be maintained from six to

eight hours to favor a rapid development of the contained organisms.

This improvised apparatus will enable any cheese maker to use the test with satisfactory results, but time can be saved and greater convenience secured if apparatus is devised for the particular purpose in hand. When the curd test is in constant use some special apparatus will be well worth the expense.

INTERPRETATION OF RESULTS.

If the milk contains no deleterious bacteria the curd when cut will present a firm, even texture as shown in Fig. 7. If gas-producing bacteria are present the texture of the curd will be more spongy, the cut surface showing a number of holes varying in size, depending upon the prevalence and gas-producing ability of the undesirable bacteria as shown in Figs. 8 and 9.

Care should be taken to discriminate between purely mechanical holes that are formed by the failure of the curd to mat closely and those caused by the fermentation of gas. Mechanical holes are irregular in form and more variable in size, while holes formed by gas are circular in outline and more uniformly distributed throughout the whole mass of curd. As gas continues to be formed, the curd puffs up and some of the gas may escape into these mechanical openings, distending them, and giving them the appearance of regularly formed gas holes. The size of the gas holes in the curd is largely dependent upon the duration and activity of the fermentations. The longer the curd is allowed to ferment at a proper temperature, the larger and more numerous will be the holes. Even in a good milk, a few holes will develop if the curd is held for 24 hours or more, but the presence of a few "pin holes" within six hours need not condemn a milk unless accompanied by undesirable odors.

The conditions under which the curd test is conducted accelerate the fermentative action, so that a milk that might show no symptoms of gas formation until the cheese was on the shelf, would be detected when subjected to the curd test. Milks that are sufficiently contaminated to produce floating curds will show a very spongy texture in the test in a few hours.

No hard and fast rules can be given for the interpretation of the results of the curd test, but an ordinary operator will very quickly learn to discriminate between milks that should and should not be accepted.

It should be borne in mind that the formation of gas is generally accompanied with the production of other decomposition products that possess more or less pronounced undesirable flavors and odors and that the injury to the cheese is due to this more than to the mere mechanical presence of gas.

It is also possible that taints may be produced by bacterial decomposition in cases where no gas is formed. This is particularly true with that class of organisms that act upon the albumen and casein instead of the milk sugar. Those bacteria that find their way into the milk through the introduction of filth and dust are particularly prone to produce this change, and this type of fermentation is very often found during the summer months. In the curd test such milks are not condemned upon the texture of the curd but upon the odor which is more or less pronounced when the bottles are opened.

CONCLUSION.

From the foregoing it is evident that the Wisconsin curd test in the hands of the factory operator is a valuable adjunct in enabling him to determine the presence of taints which might otherwise escape detection. The losses that accrue from these sources are in the aggregate very large and the difficulty hitherto has been that the cause of these troubles could not be located with sufficient accuracy to enable restrictive measures to be employed. The Wisconsin curd test fills this want and has been shown to be an efficient detective of tainted milks. It is therefore earnestly recommended that this test be employed in factories when difficulties of this sort are met with.

While the curd test is especially useful in helping to solve the controversies that arise in every factory between maker and patrons as to the presence and origin of tainted milks, the other factory tests mentioned in this bulletin should not by any means be ignored as they will often throw light upon the character of the milk.

Prepared milk adulterants.

Formic aldehyd.

The preparation and sale of carefully made adulterants and preservatives for milk, calculated to elude both consumer and chemist, are increasing. Formic aldehyde for the preservation of milk has been largely sold under the following titles: "Freezine," "Liquid Sweet" and "Special M. Preservaline." Extravagant claims are usually made as to the properties of these substances. In one instance the formalin was stated to act in the same manner as "freezing the bacteria." In all instances the material is guaranteed to be non-poisonous and perfectly harmless.

Injurious nature of.

The injurious character of formalin in the concentrated state is well known, and its effect upon living cells, even when greatly diluted, is best shown by pointing out that the use of formalin as a preservative for morphine solutions for use as ear drops was discontinued because the formalin seemed to kill the skin, causing it to dry and peel off where it had remained in contact with it, even when highly diluted.

I would emphasize the fact that the use of any of these preservatives is only necessary where milk is filthy, or has not been properly cared for. If their use is wholly prohibited by law, the purchaser may be assured that old or dirty milk will show its true character through the taste and smell.

Formic aldehyd, detection.

For the detection of formic aldehyde in milk three tests have proved of value in my hands. Perhaps the most satisfactory is the phloro-glucin test, as suggested by M. Jorissen, and described in the Analyst, 1897, page 282. A modification of this test has been used as follows:

Phloroglocin test.

.500 Gm. of phloro-glucin and 10 Gms. of caustic potash are each dissolved in a small amount of water, mixed and diluted to 50cc.; 10cc. of the milk to be tested is placed in a white capsule and 2cc. of the reagent added. Upon mixing, a pink color rapidly develops when formalin is present. A strong reaction is yielded when one dram of formic aldehyde (40%) is added to 8 gallons of milk. One-half this amount gives a distinct showing and may be detected.

Hehner's test.

Hehner's test, resulting in the production of a violet color at the point of contact, when milk is overlaid on concentrated commercial sulphuric acid, gives reliable results and is extremely sensitive with certain samples of acid. When acid giving a satisfactory re-

action is found, it is well to reserve a portion of it especially for this purpose. The color produced will frequently remain for several days.

Lieberman's
reaction.

The distillate from milk preserved with formic aldehyde may also be tested when mixed with a very dilute aqueous solution of phenol and overlaid on sulphuric acid, formic aldehyde being indicated by a crimson coloration.

Silver test.

The silver reduction test may also be used as corroborative evidence in working upon fairly concentrated distillates. Reduction takes place more rapidly when a small quantity of caustic soda is added to the silver nitrate solution which has previously been precipitated and re-dissolved in a slight excess of ammonia. A distinct and decisive reduction should take place in every case where reliance is placed on this reaction.

Shiff's
re-agent.

Shiff's re-agent has been shown to give fallacious results upon milk, and is not to be recommended.

Formalin in
wines and
cider.

Hehner's test for formic aldehyde in milk may be modified, as suggested by him, so as to be of value in the detection of formic aldehyde in wine, cider and similar liquors. The blue color is the result of the reaction between the proteids of the milk, the formic aldehyde and the acid in the presence of small amounts of ferric chloride or similar salts. If, then, to wine or cider a few drops of milk are added and the mixture overlaid on sulphuric acid, the blue-to-violet coloration will take place.

Gelatin
detection.

A method of detecting gelatin in milk was published by Stokes in the Analyst for December, 1897. A quantity of mercury is dissolved in twice its weight of concentrated nitric acid and the resultant solution diluted to 25 times its bulk. 10cc. of this solution is added to 10cc. of cream with 20cc. of water. The mixture is then shaken, allowed to stand for five minutes and filtered. To this filtrate picric acid solution is added precipitating the gelatin when present.

Writer's
method.

In the tests made by this department tannic acid has been used as a precipitant and the casein, albumen and globulin removed by the following method:

A volume of cream from 25 to 50cc. is precipitated by mixing with an equal volume of 5% sulphuric acid; the mixture is then warmed until separation of

the casein takes place, and filtered. To the filtrate magnesium sulphate is added until a flocculent precipitate is produced. The precipitated albuminoids are then removed by filtration and the filtrate tested for gelatin with a 5% solution of tannic acid. A flocculent and quickly subsiding precipitate is produced in case gelatin is present. It is well to carry on a corresponding test upon pure cream under the same conditions for comparison. Prof. A. H. Lowe has pointed out that when the magnesium sulphate becomes too concentrated tannin is liable to be precipitated.

Dextrin.

Dextrin is said to be in use in England and on the continent as a similar adulterant for cream and milk. No milk adulterated with dextrin has reached this department.

Laktone.

A coloring matter sold for use as a milk adulterant for the purpose of giving the milk an appearance of richness was found to consist of a solution of "sulphonated aniline yellow."

For the detection of ordinary adulterants in milk and their estimation, the methods published in the previous report of this department, together with the official methods, have been used.

Samples examined.

In addition to the milk samples tested for fat, quantitative analyses were made of sixty-eight samples of milk and three samples of cream. In eleven instances the milk was found to be watered and in five instances it was found to be skimmed. Boracic acid was detected in three samples and formic aldehyde in one. One sample of milk was also found to contain starch. Butter color was found in cream in one instance.

BUTTER AND OLEOMARGARINE.

Methods of examination.

In the examination of samples of suspected butter the official methods have been used. For the identification of the fat the Reichert-Wollny number has been relied upon, together with physical examination by means of the Wollny butyro-refractometer and the polariscope.

Properties of renovated butter.

Renovated butter is becoming very common. The Reichert number is found to be about the mini-

mum for normal butter. The polariscope and selenite shows a crystalline and prismatic field, and with the refractometer the sample gives figures slightly higher than normal for butter.

Examination
for coloring.

The coloring matter used in oleomargarine has in all instances been found to consist of oil soluble azo colors, stated by Allen to be allied to "Soudan I." For the extraction of oil soluble coloring matter, Martin's test is probably the most serviceable. For this test alcohol is nearly saturated with carbon disulphide and 10 Gms. of the melted and filtered fat are mixed with 50cc. of the mixture and shaken. A layer of carbon di-sulphide and fat settles to the bottom, leaving the larger portion of the coloring matter with some fat and free fatty acids in solution in the alcohol. If the alcohol or alcoholic mixture is acidulated with sulphuric acid or other mineral acid, a pink coloration takes place when a coal tar color of the Soudan type is present. (Allen.) Natural coloring matter of butter is not soluble in alcohol. Upon evaporation of the alcohol separated by the above process, the coloring matter may be concentrated and will be found contaminated with fatty matter. The residue may be purified by solution in alcohol and saponification. The alcohol should then be evaporated and the resultant soap dissolved in hot water and the solution cooled. The coloring matter may then be extracted from the alkaline aqueous solution by washing with ether. If non-alcoholic ether is used alcohol must be added in considerable quantity in order to effect a ready separation. The separated ethereal solution should then be washed at least twice with water for the removal of the dissolved soap. The ether may then be evaporated leaving the coloring matter sufficiently concentrated for presentation as evidence. This coloring matter is not a dye and therefore cannot be exhibited in the usual manner by dyeing yarn.

BUTTER COLORS.

Coal tar colors.

The use of coal tar colors as butter colors has been much discussed during the past few years. Several instances of undoubted poisoning by the use of such colors have occurred where the butter color itself has been taken internally in its concentrated form. While it is probably a fact that the amount of dry color used in any one pound of butter does not exceed two-tenths of one grain under ordinary circumstances, and that several times this amount might be administered in the concentrated form with impunity, it is nevertheless also a fact that wholly satisfactory vegetable coloring can be procured at a reasonable cost. And where harmless substances can be used it would seem there could be no excuse for the use of deleterious colors in food products in any amount whatever.

Renovated butter.

The rigid regulation of the sale of oleomargarine has given incentive to a new industry. In Illinois and various parts of the east and in one instance in Wisconsin, butter manufacturers have sent agents abroad buying up cheaper grades of dairy butter. This material of inferior and greatly varying quality is melted and treated to remove or mask its rancidity, after which it is chilled, churned with fresh milk and uniformly colored, with or without the addition of ethers or glucose to improve its flavor. This material thus renovated has been known as "Process Butter." Parties in Elgin and Chicago have placed it upon the market in competition with regular creamery butter, quoting it as such.

It has been found possible to closely imitate the original grain of the butter and to produce a flavor, which, if not pleasant, is unobjectionable for a few weeks after its treatment.

Legislation on.

An effort will probably be made at this session of the legislature to put such restrictions upon the sale of this article as will insure its being put upon the market under its true name of "Renovated Butter," and thus prevent its being foisted upon the public as the fresh article.

The results of examinations of butters and butter substitutes are here appended in tabulated form.

Analysis of butters and butter substitutes.

Date.	Name.	Address.	Character of field with polarized light.	BUTYRO-REFRACTO-METER.		Reichert No. (cc. of $\frac{N}{10}$ NaOH)	Remarks.
				Critical angle.	Butter scale.		
1896. Nov. 18	C. E. Meyers Factory	Medina	Monochromatic				Genuine butter.
1897. Jan. 23	Milwaukee County Almshouse	Milwaukee	Prismatic			32.0	Genuine butter.
Feb. 9	N. Simon (Chicago consignment)	Neenah	Monochromatic			29.8	Genuine butter.
Feb. 9	Mr. Prout	Honey Creek	Monochromatic			30.2	Genuine butter.
Feb. 10	J. P. Smith	Lake Geneva	Monochromatic			26.9	Genuine butter.
Feb. 11	Geo. Auer (sent by)	Milwaukee				27.4	Genuine butter.
Mch. 5	Gronquist & Erickson	West Superior	Monochromatic			27.3	Genuine butter.
Mch. 11	Wilson & Link	Superior	Monochromatic			29.6	Genuine butter.
June 3	Wm. Jones (Hotel)	Oconomowoc	Prismatic	50.3	46.5		Oleomargarine.
Nov. 10	C. W. Howard (Restaurant)	Milwaukee	Prismatic	48.5	44.3	1.0	Oleomargarine.
Nov. 10	L. S. Townsend (Restaurant)	Milwaukee	Prismatic	49.	44.5	.9	Oleomargarine.
Nov. 10	Wm. Orlebeke (Restaurant)	Milwaukee	Prismatic	49.	44.6	.9	Oleomargarine.
Nov. 10	"One Minute Lunch House"	Milwaukee	Monochromatic	44.	44.8		Genuine butter.
Nov. 18	Gus. Draeger	Milwaukee	Monochromatic				Butter.
Nov. 18	G. Jessen	Milwaukee	Monochromatic				Butter.
Nov. 18	Eidelweiss Cafe	Milwaukee	Monochromatic				Butter.
Nov. 18	Emil Lange	Milwaukee	Monochromatic				Butter.
Nov. 18	Restaurant, 450 E. Water St.	Milwaukee	Monochromatic				Butter.
Nov. 18	Vienna Restaurant	Milwaukee	Monochromatic				Butter.
Nov. 18	W. Koch	Milwaukee	Monochromatic				Butter.
Nov. 24	Geo. O. Elliott (Restaurant)	Milwaukee	Prismatic	51.5	45.3	.9	Oleomargarine.
Nov. 24	Fess House	Madison	Prismatic	48.5	45.	9.8	Butterine.
Nov. 23	Elver House	Madison	Prismatic	50.5	45.2	2.1	Oleomargarine.
Nov. 23	Michael Meyers	Madison	Prismatic	53.	45.3	10.4	Butterine.
Nov. 24	Central House	Milwaukee	Prismatic	44.	44.8	27.5	Butter.
Nov. 24	Pabst Cafe	Milwaukee	Monochromatic				Butter.
Nov. 24	Sargeant's Restaurant	Milwaukee	Monochromatic				Butter.
Nov. 24	M. H. Bauer (Restaurant)	Milwaukee	Monochromatic				Butter.
Nov. 24	Weber's Restaurant	Milwaukee	Monochromatic				Butter.
Nov. 24	Chamber of Commerce Restaurant	Milwaukee	Monochromatic				Butter.
Nov. 24	A. Hoffmann's Restaurant	Milwaukee	Prismatic	49.5	45.	2.5	Oleomargarine
Nov. 29	J. Linehan, butcher,	Milwaukee	Monochromatic	43.5	44.3		Butter.

1897.							
Jan. 4	Sent by J. A. Foster.....	Salem.....					This sample contained a large amount of casein and waterand was evidently made by the black pepsin process.
Nov. 30	Flom's Hotel.....	Madison.....	Prismatic.....	54.	46.2	.75	Oleomargarine, colored.
Nov. 30	Gem Restaurant.....	Madison.....	Monochromatic.....	42.5	44.3		Butter.
Nov. 30	Edw. McGrath.....	Milwaukee.....	Prismatic.....	50.	44.8	9	Oleomargarine, colored.
Nov. 26	D. C. Adams.....	Milwaukee.....	Prismatic.....	51.	45.8		Sold as butterine, uncol'd
Dec. 1	Avenue Hotel.....	Madison.....	Monochromatic.....	44.	44.9		Butter.
Dec. 1	Lacher Hotel.....	Madison.....	Monochromatic.....	46.	46.2		Butter.
Dec. 9	Burk's Hotel.....	Madison.....	Monochromatic.....	45.5	46.3		Butter.
Dec. 9	C., M. & St. P. Lunch Counter.....	Madison.....	Monochromatic.....	43.5	44.5		Butter.
Dec. 9	Ogden Hotel.....	Madison.....	Monochromatic.....	43.5	44.3		Butter.
Dec. 22	Capitol House.....	Madison.....	Monochromatic.....	46.	46.		Butter.
Dec. 22	C. & N. W. Hotel.....	Madison.....	Monochromatic.....	46.	47.		Butter.
Dec. 22	Park Hotel.....	Madison.....	Monochromatic.....	42.5	44.2		Butter.
Dec. 22	W. F. Carle.....	Janesville.....	Prismatic.....	53.	45.		Sold as but'rine, uncol'd.
Dec. 22	McGavock Bros.....	Beloit.....	Prismatic.....	53.5	44.6		Butterine, colored.
Dec. 23	E. H. Schwartz & Co.....	Marinette.....	Monochromatic.....	44.5	43.8		Butter.
Dec. 23	E. H. Schwartz & Co.....	Marinette.....	Prismatic.....	53.	44.5		Butterine, uncolored.
Dec. 22	Grand Hotel.....	Janesville.....	Monochromatic.....	44.7	45.5		Butter.
Dec. 22	Watson's Restaurant.....	Janesville.....	Monochromatic.....	43.	44.		Butter.
Dec. 22	Hotel Goodwin.....	Beloit.....	Monochromatic.....	43.	41.6		Butter.
1898.							
Feb. 12	C. & N. W. Depot.....	Janesville.....	Monochromatic.....	44.	44.8		Butter.
Feb. 16	Windsor Hotel.....	Fond du Lac.....	Monochromatic.....	45.	47.7		Butter.
Feb. 16	Palmer House.....	Fond du Lac.....	Monochromatic.....	44.5	46.3		Butter.
Feb. 17	Meyers House.....	Janesville.....	Monochromatic.....	46.5	48.4		Butter.
Feb. 23	Russell House.....	Janesville.....	Monochromatic.....	44.	45.		Butter.
Feb. 23	Sent by E. B. Heimstreet.....	Janesville.....	Monochromatic.....	40.	44.3		Butter.
Feb. 23	.....	Sun Prairie.....	Monochromatic.....	43.2	47.		Butter.
Mch. 4	Shiocton Hotel.....	Shiocton.....	Monochromatic.....	41.	46.7		Butter.
Mch. 23	Jones House.....	Oconomowoc.....	Monochromatic.....	46.	47.		Butter.
Mch. 23	Wegemann & Straus.....	Watertown.....	Monochromatic.....	46.	47.		Butter.
Apr. 27	Geo. O. Elliot.....	Milwaukee.....	Prismatic.....	41.5	42.3		Renovated butter.
May 17	Restaurant Camp Harvey (taken with meal by W.W. Chadwick).....	Milwaukee.....	Monochromatic.....	45.0	46.2		Genuine.

Dairy and Food Commissioner.

CHEESE.

Examination. For the examination of cheese official methods have been used. Sufficient fat for examination can frequently be readily obtained by placing a few ounces of the chopped cheese in a close muslin cloth in a dish upon the water bath. Several Gms. of fat will usually flow out clear and sufficiently free from water for examination by the Reichert test and butyro-refractometer.

Several samples of cheese have been examined, two of which were found to be skimmed. No cheese containing foreign fat has been found in Wisconsin during the past two years.

Date.	Name.	Address.	Butter fat.	Remarks.
1896. Nov. 1.	Jos. Mallmann	Manitowoc	33.9	This cheese is known to be made from milk partly skimmed. Milk at this season of the year averaged 4.2 per cent. butter fat.
1897. April 8.	Sent by L. O'Brien	West Superior...	16.02	Skimmed.

June 2. "New York State Cheese" on Madison market. This cheese caused suspicion by separating on cutting into an outer shell and central core, differing slightly in color. Portions from each contained the same amount of fat,—34.1 and 34.2 per cent. The oleo refractometer showed both to contain butter fat, and the Reichert No. was found to be 29.9 and 29.8 respectively. The central core probably consisted of cheese left over from one batch and placed in the center of a cheese made subsequently and with which it did not cohere.

1897.
July 30. Bought of F. C. Bates, Milwaukee. Made by Fred Luder, Mount Horeb. Retailed at seven cents. Contained 31.9 per cent. fat, having a Reichert No. 33.7. Passed as pure.

Aug. 3. N. Simon, Neenah. "Young America." Butter fat 36.9 per cent. fat.

Oct. 1. J. Wm. Beilke, Wausau. Contained 33.75 per cent. butter fat. Passed.

Several samples of cheese have been examined for tyrotoxicon, or similar ptomaines, without positive results.

VINEGAR.

But little change has taken place in the status of the vinegar production during the past two years.

Methods for the identification of cider solids as distinct from foreign solids are being but slowly elaborated. As suggested by Smith, a valuable indication is found in the quantity of ash and the proportion of phosphates contained therein. The condition of the phosphates as to solubility will probably prove

of less value than was originally asserted, but the ratio of the phosphoric acid to the whole amount of ash present is likely to prove of much value. The methods used in the examination of vinegar are the same as were given in the previous report of this department.

Vinegar
extracts.

Certain so-called vinegar extracts have been placed upon the market, with directions that one pint of the extract, or a given amount, be diluted with water, to a fixed volume, as one gallon, to produce a first-class table vinegar. These "extracts" are mixtures of strong acetic acid and caramel. The flavor, which is the result of by-products produced in fermentation, is entirely wanting in these vinegars. They are simply colored dilute acetic acid. The use of such extracts should be discountenanced.

The appended table gives the results of examinations of vinegars made during the last two years.

Analysis of Vinegar.

1896.	Sample sent by—	Postoffice.	Sold by—	Sold as—	Acetic acid per cent.	Solids per cent.	Malic acid.	Comments.
Oct. 3	E. B. Sanders	Merrillan	Alden Vin. Co., St. Louis	Apple cider (6 yr old)	3.15	0.45	None	Condemned.
Oct. 7	Stiles & Rogers (1)	Beloit	P. Bechtner Vin. Co., Milwaukee	Apple cider	4.56	3.92	Present	Passed.
Oct. 7	Stiles & Rogers (2)	Beloit	P. Bechtner Vin. Co., Milwaukee	Apple cider	4.86		Present	Passed.
Oct. 7	J. E. Paine	Marshfield	Alden Vin. Co., St. Louis	Pure cider	2.91	0.47	None	Condemned.
Oct. 7	Geo. Weisner	Neillsville	Alden Vin. Co., St. Louis	Pure cider	2.93	0.40	None	Condemned.
Oct. 7	H. C. Prange	Sheboygan	Mr. Giddings, She. Falls	Farmer's cider	3.24	2.16	Present	Acid low.
Oct. 8	Jos. Stadler	Appleton	Alden Vin. Co., St. Louis		2.56			Condemned.
Oct. 12	P. F. Perry	Madison	Red Cross Vin. Co., St. Louis	Cider	3.95	1.56	Large amt	Sl'g'tly below
Oct. 15	P. Hanson	Eau Claire	Red Cross Vin. Co., St. Louis	Cider	4.09	0.23	None	Not cider.
Oct. 15	Geo. Weisner	Neillsville	Red Cross Vin. Co., St. Louis		4.26	0.20	None	Not cider.
Oct. 22	H. Fleishbein	Glidden	Alden Vin. Co., St. Louis	Pure cider	3.09	0.20	None	Condemned.
Oct. 22	H. E. Brehme	Green Bay			3.18	.45	None	Condemned.
Oct. 27	W. F. Ferguson	Madison	Roundy, Peckham & Co., Milwaukee	Cider	5.25	3.32	Large amt	Passed.
Oct. 27	Wm. Steinmeyer & Co.	Milwaukee	Petrie Fruit Co., Rochester, N. Y.		4.95		Large amt	Passed.
Nov. 17			Red Cross Vin. Co., St. Louis	Pure apple	4.11	0.22	None	Not cider.
Nov. 17	M. L. Nelson	Madison		Cider	4.14		Large amt	Passed.
Nov. 25				Michigan cider	4.32	2.44	Large amt	Passed.
Dec. 4	J. W. Calkins	Evansville	C. H. Rosenstiel, Freeport, Ill.	Crown brand	5.04		None	Not cider.
Dec. 4	J. W. Calkins	Evansville	Franklin, McVeagh & Co., Chicago	Pure apple	3.84		Present	Acid low.
Dec. 4	M. Fitz & Co.	Milwaukee	Bo't by W. W. Chadwick	Cider	4.63	1.01	Small amt	Part cider.
Dec. 4	B. F. Oetken	Milwaukee	Bo't by W. W. Chadwick	Cider	3.72	4.04	Present	Acid low.
Dec. 4	Wm. Weichhardt	Milwaukee	Bo't by W. W. Chadwick	Cider	4.22	3.03	Present	Passed.
Dec. 4	D. D. Evans & Co.	Milwaukee	Bo't by W. W. Chadwick	Cider	3.86	.30	None	Condemned.
Dec. 4	Reimer & Hensler	Milwaukee	Bo't by W. W. Chadwick	Cider	4.23	.28	None	Condemned.
Dec. 4	Geo. Gieger & Co.	Milwaukee	Bo't by W. W. Chadwick	Cider	4.13	2.40	Present	Passed.
Dec. 8	Thos. Flatly	Chilton	Alden Vin. Co., St. Louis	Jeniton	3.44	.45	None	Condemned.
Dec. 15	A. Graef	Hortonville	Alden Vin. Co., St. Louis	Pure apple	3.27	.59	None	Condemned.
Dec. 15	Clifford & Smilie	Beloit	Reed, Walsh & Lange, Chic.	Cider	4.11	1.84	Large amt	Low in solids.
1897.								
Jan. 15	D. D. Evans & Co.	Milwaukee	(Sent for comparison)	Cider	2.78	.40	None	Condemned.
Jan. 15	W. Bentzler	Milwaukee	Rediske Vin. Co., Milwaukee	White distilled	10.02			
Jan. 15	Rhymer & Hensler	Milwaukee	Amer. Vin. Works, Milw.	White Pickling	4.46			Passed.
Jan. 15	Rhymer & Hensler	Milwaukee	Amer. Vin. Works, Milw.	Pure cider	4.62	3.98	Present	Passed.

Jan. 15	Rhymer & Hensler	Milwaukee	Amer. Vin. Works, Milw	Brown distilled	4.32			Passed.
Feb. 10	W. O. Bentzler	Milwaukee	Redske Vin. Co., Milwaukee	White distilled	10.20			
Feb. 10	Rhymer & Hensler	Milwaukee	Mendel, Smith & Co.	Brown distilled	4.60			Passed.
Feb. 10	Rhymer & Hensler	Milwaukee		White distilled	4.35			Passed.
Feb. 10	Rhymer & Hensler	Milwaukee	Red Cross Vin. Co., St. Louis	Pure cider	4.35	0.22	None	Condemned.
Feb. 24	Rhymer & Hensler	Milwaukee	Red Cross Vin. Co., St. Louis	Pure malt	4.66			Distilled.
Feb. 24	H. E. Genske	Plymouth	Alden Vin. Co., St. Louis	Red A.	3.03	.39		Condemned.
Feb. 24	H. E. Genske	Plymouth	Alden Vin. Co., St. Louis	White wine	3.78			Condemned.
Feb. 24	H. E. Genske	Plymouth	Alden Vin. Co., St. Louis	West India spiced	3.63	.40		Condemned.
Mch. 3	Geo. R. Taylor	Milwaukee	Red Cross Vin. Co., St. Louis	Cider	4.38	2.65	Present	Passed.
Mch. 4	Albert Heath	Milwaukee	Bo't by W. W. Chadwick	Cider	2.97	.54	None	Condemned.
Mch. 4	C. R. Mapes	Milwaukee	Bo't by W. W. Chadwick	Cider	5.85	0.38	None	Condemned.
Mch. 4	Geo. Wagner	Milwaukee	Bo't by W. W. Chadwick	Cider	5.28	2.99	Present	Passed.
Mch. 4	Bo't of H. W. Schwab	Milwaukee	H. J. Heinz & Co., Pittsburg	Cider	4.47	2.85	Large amt.	Passed.
Mch. 12	C. Rostad	Milwaukee	Bo't by W. W. Chadwick	Cider	4.00	.38	None	Condemned.
Mch. 12	P. Anchuetz	Milwaukee	Bo't by W. W. Chadwick	Cider	3.67	3.41	Present	Passed.
Mch. 18	E. J. Hirthe	Milwaukee	Bo't by W. W. Chadwick	Cider	2.76			Under streng.
Mch. 18	E. P. Balcom	Milwaukee	Bo't by W. W. Chadwick	Cider		4.20	Present	Passed.
Mch. 18	Chas. Paik	Milwaukee	Bo't by W. W. Chadwick	Cider	3.14	3.77	Large amt.	Not wholly fermented.
Mch. 18	P. Hackendahl	Milwaukee	Bo't by W. W. Chadwick	Cider	4.08	1.30	Present	Below in sol's.
Mch. 18	D. Dickson	Milwaukee	Bo't by W. W. Chadwick	Spiced	3.91	1.41	Large amt.	Below in sol's.
Mch. 18	W. H. Behl	Milwaukee	Bo't by W. W. Chadwick	Cider	5.40	4.05	None	Foreign sol's.
Mch. 18	John Nickel	Milwaukee	Bo't by W. W. Chadwick	Cider	5.16	4.36	None	Foreign sol's.
Mch. 18	Adolph Rosenheim	Milwaukee	Bo't by W. W. Chadwick	Cider	2.76	.60	None	Condemned.
Mch. 25	Fred Leskey	Berlin	Bo't by W. W. Chadwick	Cider	5.67	.20	None	Condemned.
Mch. 25	B. D. Fuller	Berlin	Bo't by W. W. Chadwick	Cider	4.00	0.22	None	Condemned.
Mch. 25	J. C. Priske	Berlin	Bo't by W. W. Chadwick	Cider	7.04	0.60	None	Condemned.
Mch. 25	C. Johnson	Berlin	Bo't by W. W. Chadwick	Cider	4.17	1.47	Present	Solids below.
Mch. 25	C. Brunk	Berlin	Bo't by W. W. Chadwick	Cider	4.17	1.57	None	Condemndd.
Mch. 25	L. C. Schmidt	Berlin	Bo't by W. W. Chadwick	Cider	4.17	0.15	None	Condemned.
Apr. 2	Walther & Frederickson	Oconomowoc	Red Cross Vin. Co., St. Louis	Cider	3.96	.27	None	Condemned.
Apr. 2	Buri & Karlen	Monroe		Distilled white	4.59			
Apr. 2	Buri & Karlen	Monroe		Cider	4.70	4.10		Passed.
Apr. 13	Chas. Harnes	Milwaukee	Rediske Vin. Co., Milwaukee	Cider	4.15	2.49	Present	Passed.
Apr. 14	Fred Schaefer	Milwaukee	The P. Bechtner Co., Mil	Cider	4.85	4.49	Large amt.	Passed.
Apr. 14	Albert Heath	Milwaukee	The P. Bechtner Co., Mil	Cider	4.92	4.40	Large amt.	Passed.
Apr. 9	J. W. Nichols & Co.	Livingston		Cider	2.62	1.41	Present	Condemned.
Apr. 9	John Kelly	Milwaukee	The P. Bechtner Co., Mil	Cider	4.20	4.56	Present	Passed.
Apr. 9	Buri & Karlen	Monroe		Fermented wine	2.91	.77		Condemned.
Apr. 15	W. L. Rhodes	Appleton	Breckenbauer, Plymouth	Cider	3.86	1.68	Present	Below st'd'rd.
Apr. 15	G. Lausmann	Appleton	Bo't by W. W. Chadwick	Cider	4.41	.36	None	Condemned.
Apr. 15	C. A. Devener	Appleton	Bo't by W. W. Chadwick	Cider	5.30	.29	None	Condemned.
Apr. 15	Walsh & Otte	Appleton	Bo't by W. W. Chadwick	Cider	4.22	.26	None	Condemned.
Apr. 15	W. Butler	Appleton	Bo't by W. W. Chadwick	Cider	4.08	2.79	Present	Passed.
Apr. 15	E. Schrottky	Appleton	Bo't by W. W. Chadwick	Cider	4.35	1.09		Condemned.
Apr. 17	H. Rademacher & Son.	Appleton	Bo't by W. W. Chadwick	Cider	3.29	.84	None	Condemned.
Apr. 15	C. W. Schultz	Appleton	Bo't by W. W. Chadwick	Cider	4.90	2.87	Small amt.	Passed.

Analysis of Vinegar — Continued.

1897.	Sample sent by—	Postoffice.	Sold by—	Sold as—	Acetic acid per cent.	Solids per cent.	Malic acid.	Comments.
Apr. 15	Ingold Bros.....	Appleton.....	Bo't by W. W. Chadwick....	Cider.....	3.79	.75	Small amt...	Condemned.
Apr. 15	N. Schafer.....	Appleton.....	Bo't by W. W. Chadwick....	Cider.....	3.67	4.11	Small amt...	Below str'g'h.
Apr. 20	D. B. Bailly.....	Appleton.....	Bo't by W. W. Chadwick....	Cider.....	3.91	1.33	Small amt...	Condemned.
Apr. 20	N. Nitschke.....	Appleton.....	Bo't by W. W. Chadwick....	Cider.....	5.30	1.60	Small amt...	Solids below.
Apr. 20	Marugg & Briese.....	Appleton.....	Bo't by W. W. Chadwick....	Cider.....	4.20	.95	Small amt...	Condemned.
Apr. 20	Ben D. Fuller.....	Berlin.....	.....	Cider.....	4.85	4.28	Present.....	Passed.
Apr. 20	Ben D. Fuller.....	Berlin.....	.....	Cider.....	3.93	1.64	Present.....	Below str'g'h.
Apr. 22	H. F. Runge.....	La Crosse.....	Bo't by W. W. Chadwick....	Cider.....	4.14	2.95	Present.....	Passed.
Apr. 22	J. H. Forschler.....	La Crosse.....	Bo't by W. W. Chadwick....	Cider.....	4.11	1.70	Present.....	Solids below.
Apr. 22	H. C. Stephens.....	La Crosse.....	Bo't by W. W. Chadwick....	Cider.....	4.87	1.87	Present.....	Passed.
Apr. 22	A. M. Watson.....	La Crosse.....	Bo't by W. W. Chadwick....	Cider.....	3.95	.18	None.....	Condemned.
Apr. 22	C. N. Hawley.....	La Crosse.....	Bo't by W. W. Chadwick....	Cider.....	4.59	.39	None.....	Condemned.
Apr. 22	C. N. Hawley.....	La Crosse.....	.....	Cider.....	4.58	.18	None.....	Condemned.
Apr. 22	Bergouss Groc. Co.....	La Crosse.....	Bo't by W. W. Chadwick....	Catawaa wine.....	8.34	.24	None.....	Distilled vin.
Apr. 27	Walther & Fredrickson.....	Oconomowoc.....	Red Crss V. Co., St. Louis.....	Cider.....	4.01	2.15	Present.....	Passed.
Apr. 27	Roland & O'Dwyer.....	Waupun.....	W H. Bunge & Co., Chicago.....	Cider.....	5.46	2.12	Present.....	Passed.
Apr. 29	D. B. Bailly.....	Appleton.....	Sprague, Warner & Co., Chi.....	Cider.....	3.93	1.32	Small amt...	Understr'gth.
Apr. 29	D. B. Bailly.....	Appleton.....	Sprague, Warner & Co., Chi.....	Cider.....	4.11	2.19	Mod'rate amt	Second lot.
Apr. 29	J. S. Hussman.....	Milwaukee.....	.....	Cider.....	3.36	3.24	Large amt...	Low in acid.
Apr. 29	Dolliver & Murphy.....	Berlin.....	Red Cross V. Co., St. Louis.....	Cider.....	4.21	.17	None.....	Condemned.
Apr. 29	A. E. Bi-shop.....	Ripon.....	Red Cross V. Co., St. Louis.....	Old stock.....	3.88	.17	None.....	Condemned.
Apr. 29	A. E. Bishop.....	Ripon.....	Red Cross V. Co., St. Louis.....	New stock.....	4.62	2.30	Large amt...	Passed.
May 6	D. C. Adams.....	Milwaukee.....	The P. Bechtner Co, Mil.....	Cider.....	4.20	3.33	Large amt...	Passed.
May 6	Remington Drug Co.....	Fond du Lac.....	.....	Cider.....	4.06	.21	None.....	Condemned.
May 6	Appleton Pres. Co.....	Appleton.....	.....	Cider.....	3.69	1.66	.....	Spiced, condemned.
May 6	Chas. Paul.....	Neenah.....	Amer. Vin. Works, Mil.....	Cider.....	4.08	4.01	Present.....	Passed.
May 6	L C Schmidt.....	Berlin.....	.....	Cider.....	4.44	2.46	Large amt...	Passed.
May 6	L. C. Schmidt.....	Berlin.....	.....	Cider.....	4.50	3.75	Large amt...	Passed.
May 11	Dahinden & Co.....	Milwaukee.....	.....	Cider.....	4.23	2.71	Small amt...	Passed.
May 11	Marugg & Briese.....	Appleton.....	Amer. Vin. Works, Mil.....	Cider.....	4.52	4.85	Small amt...	Passed.
May 12	H. Rademacher.....	Appleton.....	Amer. Vin. Works, Mil.....	Cider.....	4.53	4.68	.....	Passed.
May 11	T. E. Ward.....	Appleton.....	.....	Cider.....	4.05	.25	None.....	Condemned.
May 11	John Oelhafen.....	Tomahawk.....	H. Scheffels & Son, Mil.....	Cider.....	4.08	3.72	Large amt...	Passed.
May 12	John Oelhafen.....	Tomahawk.....	Red Cross, St. Louis.....	Cider.....	4.32	.25	None.....	Condemned.
May 12	J. G. Poser & Co.....	Merrill.....	Mich. Cider Co., Chicago.....	Cider.....	4.26	2.45	Large amt...	Passed.
May 12	F. J. Runge.....	Merrill.....	.....	White distilled.....	4.05	.....	.....	Passed.
May 12	John Oelhafen.....	Tomahawk.....	.....	Green.....	4.56	1.45	.....	Solids low.
May 12	Alsteens & Co.....	Neenah.....	Bo't by W. W. Chadwick....	Cider.....	4.56	.....	.....	Passed.
May 12	J J. Luetenegger.....	Neenah.....	Bo't by W. W. Chadwick....	Cider.....	4.98	2.05	Present.....	Passed.

May 12	C. S. Briggs & Co.	Neenah	Bo't by W. W. Chadwick	Cider	4.74	2.79	Prentes	Passed.
May 12	F. W. Buboltz	Menasha	Bo't by W. W. Chadwick	Cider	2.53	.60	None	Condemned.
May 12	Karl Koch	Menasha	Bo't by W. W. Chadwick	Cider	2.82	.83	Small amt	Condemned.
May 12	J. Planner	Menasha	Bo't by W. W. Chadwick	Cider	4.12	.29	None	Condemned.
May 12	Chas. Paul	Neenah	Bo't by W. W. Chadwick	Cider	4.05	4.05	Large amt.	Passed.
May 13	Bungener & Bur.	Green Bay	Bo't by W. W. Chadwick	Cider	5.79	2.18	Small amt.	Passed.
May 13	A. E. Zeibel.	Wausau	Amer. Vin. Works, Mil.	Cider	4.48	5.28	Large amt.	Passed.
May 13	Nejidlo Bros.	Green Bay	Joannes Bros. Green Bay	Cider	3.90	3.28	Large amt.	Passed.
May 13	A. L. Platten	Green Bay	Bo't by W. W. Chadwick	Cider	6.30	2.45	Present	Passed.
May 13	C. P. Miller.	Green Bay	Bo't by W. W. Chadwick	Cider	4.14	1.69	Present	Solids low.
May 13	M. J. Corbett	Green Bay	Bo't by W. W. Chadwick	Cider	4.23	2.68	Present	Passed.
May 13	John Beth & Sons Co.	Green Bay	Bo't by W. W. Chadwick	Cider	4.26	2.51	Present	Passed.
May 19	J. J. Platten & Son.	Green Bay	Bo't by W. W. Chadwick	Cider	4.20	2.67	Large amt.	Passed.
May 19	F. Dacremer	Green Bay	Bo't by W. W. Chadwick	Cider	3.93	.21	None	Condemned.
May 19	Callaghan Bros.	Green Bay	Bo't by W. W. Chadwick	Cider	4.38	1.87	Large amt.	Passed.
May 19	W. W. Winegard & Co.	Green Bay	Bo't by W. W. Chadwick	Cider	3.95	.87	Present	Condemned.
May 19			M. A. Gedney Pick. Co., Minn.	Cider	6.31	3.64	Slight amt	Passed.
May 19	Brauns & Van	Green Bay	F. C. Johnson, Kishwaukee	Cider	2.52	1.97	Present	Condemned.
May 19	E. H. Brehme	Green Bay	Bo't by W. W. Chadwick	Cider	4.29	1.51	None	Condemned.
May 19	Jas. Cosgrove	Stevens Point	Bo't by W. W. Chadwick	Cider	3.57	2.80	Large amt.	Passed.
May 19	Jas. Cosgrove	Stevens Point	A. W. Richter, Manitowoc	Brown distilled	8.88			Passed.
May 19	Stiles & Rogers	Beloit	A. W. Richter, Manitowoc	Brown distilled	7.56			Passed.
May 19	Stiles & Rogers	Beloit	Sprague, Warner & Co., Chic	Cider	4.65	2.71	Present	Passed.
May 19	Stiles & Rogers	Beloit	Sprague, Warner & Co. (1 lot)	Cider	4.67		Present	Passed.
May 19	Stiles & Rogers	Beloit	Sprague, Warner & Co.	Cider	4.56		Present	Passed.
May 19	Stiles & Rogers	Beloit	Sprague, Warner & Co.	Cider	4.62		Present	Passed.
May 19	Stiles & Rogers	Beloit	Sprague, Warner & Co.	Cider	4.65		Present	Passed.
May 19	Stein Bros. & Co.	Clintonville	A. M. Richter, Manitowoc	Cider	5.07	3.95	Present	Passed.
May 19	Stein Bros. & Co.	Clintonville	P. Bechtner Vin. Co., Milw.	Cider	4.32	4.42	Small amt	Passed.
May 19	Plumb & Nelson Co.	Manitowoc	Prussing Cider Co., Chic	Cider	4.02	2.62	Traces	Colored.
May 26	J. A. Smith	Eau Claire	Bo't by W. W. Chadwick	Cider	5.40	2.60	Present	Passed.
May 26	J. McIntyre	Eau Claire	Bo't by W. W. Chadwick	Cider	4.89	4.05	Small amt	Passed.
May 26	Arthur Smith	Eau Claire	Bo't by W. W. Chadwick	Cider	4.53	1.38	Present	Passed.
May 26	Geo. Linton	Eau Claire	Bo't by W. W. Chadwick	Cider	4.71	1.80	Present	Passed.
May 26	Frank N. Larson	Eau Claire	Bo't by W. W. Chadwick	Cider	4.17	.18	None	Condemned.
May 26	C. Nelson & Co	Eau Claire.	Bo't by W. W. Chadwick	Cider	5.28	.26	None	Condemned.
May 26	T. E. Ward	Appleton		Cider	4.96	1.88	Present	Solids low.
May 26	Dolliver & Murphy	Berlin	Red Cross V. Co., St. Louis	Cider	4.35	2.85	Present	Passed.
May 26	G. R. Burton & Co	Rewey	Alden vin. Co., St. Louis	Cider	2.54	.84	Present	Condemned.
May 26	Richard Reed.	Rhinelandler	Red Cross V. Co., St. Louis	Madison Co., Cider	4.00	.26	None	Condemned.
June 2	Byron Chapel	Dartford	Reid, Murdock & Co., Chic	Cider	3.72	1.94	Present	Bel. standard
June 2	R. W. Schlagerl	Menasha	Amer. Vin. Works, Mil.	Cider	3.84	5.23	Slight amt.	Added sug'rs.
June 2	Libby & Engler	Marion	Red Cross V. Co., St. Louis	Madison Co. Cider	4.44	.38	None	Condemned.
June 2	R. Hooper	Lake Mills.	Own make	Farmers' Cider	4.65	3.02	Large amt.	Passed.
June 2	C. F. Voigt	Oshkosh		Cider	4.23	2.77	Present	Passed.
June 2	C. F. Voigt	Oshkosh	Red Cross V. Co., St. Louis	Madison Co., Cider	4.02	.36	None	Condemned.
June 8	C. J. Iverson	Amherst		Cider	3.96	.50	None	Condemned.
June 8	A. M. Richter & Son.	Manitowoc		Cider	4.02	2.20	Present	Passed.

Analysis of Vinegar — Continued.

1897.	Sent by—	Postoffice.	So'd by—	Sold as—	Acetic acid per cent.	Solids per cent.	Malic acid.	Comments.
June 8	Bergoust Groc. Co.	La Crosse	Sprague, Warner & Co., Chi	Cider	4.50	1.85	Large amt.	Solids low.
June 8	C. M. Hawley	La Crosse	Red Cross V. Co., St. Louis	Cider (2d lot)	4.56	2.64	Small amt.	Passed.
June 8	The Wm. Steinmeyer Co.	Milwaukee	E. L. Prussing & Co., Chic.	Cider	3.81	2.31	Large amt.	Passed.
June 8	O. Huum & Co.	Iola	Rediske Vin. Co, Milw	Cider	4.02	2.81	Large amt.	Passed.
June 8	H. C. Koenig	Marshfield	Am. Vin. Works, Milw	Cider	4.89	4.85	Traces	For'gn sugars
June 15	Stannard & Meader	Neillsville	C. E. Meyers & Co., Freeport	Cider	4.47	1.44	Present	Below solids.
June 15	Stannard & Meader	Neillsville	W. H. Bunge & Co., Chic	Cider	5.67	2.49	Large amt.	Passed.
June 15	Wm. Steinmeyer & Co.	Milwaukee	Genesee Fruit Co., N. Y.	Cider	4.62	2.35	Large amt.	Passed.
June 15	E. Plumb	Fond du Lac		Cider	3.99	1.65	Large amt.	Slightly weak
June 15	R. W. Schlagel	Menasha	Amer. Vin Works, Milw	Cider	4.14	4.72	Small amt.	For'gh sugars
June 15	J. B. Scherubel	Beaver Dam		Cider	3.90	.28	None	Condemned.
June 15	H. C. Prange	Sheboygan	Red Cross V. Co., St. Louis	Colored, distilled	4.74			Passed.
June 15	H. C. Prange	Sheboygan	Dahinden & Gallasch, Milw.	White, distilled	4.23			Passed.
June 16	Roland & O'Dwyer	Waupun	W. Bunge & Co., Chic	Cider	2.58	2.48	Present	Acid below.
June 16	Scanlan Bros	Lyndon Station	Alden Vin. Co., St. Louis	Cider	5.67	.62	Present	Condemned.
June 16	R. Hooper	Lake Mills	Bo't, at Lake Mills	Cider	4.23	.27	None	Not cider.
June 16	Ingold Bros	Appleton	Amer. Vin. Works, Milw	Cider	4.35	4.01	Small amt	Passed.
June 16	F. N. Larson	Eau Claire		Cider	4.08	1.56	Present	Solids low.
June 16	F. N. Larson	Eau Claire		Cider	4.11	1.68	Present	Solids below.
June 16	F. B. Hatfield	Evansville	Farmer's cider	Cider.	5.70	1.01	Slight amt.	Condemned.
June 16	F. B. Hatfield	Evansville	C. H. Rosensteil & Sons, Freeport	Brown distilled	4.47			Passed.
June 23	Whitcomb & Fcwler	Columbus	The P. Bechtner Co., Mil	Cider	4.59	4.71	None	Solids doubt-ful.
June 24	A. C. Nott & Son	Marinette	W. M. Barrett, Chicago	Cider	4.50	.46	None	Condemned.
June 24	Geo. Landweer	Medford	Amer. Vin. Wk's, Mil.	Brown distilled	7.29	.33		Passed.
June 24	J. Topp & Bro. Co	Columbus	Albion C. V. Wk's, N. Y.	Cider	5.37	4.50	Large amt.	Passed.
June 24	J. Topp & Bro. Co	Columbus	Ills. Vin. Co., Chic	White distilled	7.68			Passed.
June 24	Berg & Danielson	Ashland	C. E. Meyer & Co., Freeport.	Pure crab	4.53	1.97	Traces	Passed.
June 24	Berg & Danielson	Ashland	Amer. Vin. Wk's, Mil	Brown distilled	4.38			Passed.
June 24	Berg & Danielson	Ashland	Amer. Vin. Wk's, Mil	White distilled	4.39			Passed.
June 24	Libby & Engler	Marion	Red Cross Vin. Co., St. L.	Red cross cider	5.10	1.93	Large amt	Passed.
June 24	H. C. Prange & Co.	Sheboygan	H. J. Heinz Co., Pittsburgh.	Malt	4.68			Passed.
June 24	H. C. Prange & Co.	Sheboygan	H. J. Heinz Co., Pittsburgh.	White distilled	6.12			Passed.
June 24	S. A. Davidson	Waupun	F. C. Johnson, Kishwaukeee	Cider	4.62	2.36	Large amt.	Passed.
June 24	S. A. Davidson	Waupun	Dean Bros. & Lincoln, Chic.	Cider	4.02	1.64	Large amt.	Solids below.
June 24	D. E. Thorpe	Milton Junct.	Red Cross Vin. Co., St. L.	Madison Co. cider	4.05	0.52	none	Condemned.
June 25	Winegard & Co	Green Bay	H. J. Heinz Co., Pittsburgh	Cider	4.35	2.89	Large amt	Passed.
July 1	Wm Steinmeyer & Co.	Milwaukee		White distilled	3.99			Passed.
July 1	Kronke Bros.	Madison		Cider.	4.53	.25	None	Condemned.

July 1	F. N. Larson	Eau Claire	Cider	4.32	2.68	Present	Passed.
July 1	F. N. Larson	Eau Claire	Cider	4.35	2.72	Present	Passed.
July 1	H. M. Johnston & Co.	Glenwood	Cider	5.16	2.71	Present	Passed.
July 1	F. E. Kellner	Centralia	Cider	4.89	.53	None	Condemned.
July 1	M. Plank & Co.	Hancock	Cider	4.80	2.28	Present	Passed.
July 1	F. L. Warner	Randolph	Cider	4.35	1.14	Doubtful	Condemned.
July 2	A. M. Watson	La Crosse	Cider	4.62	2.93	Small amt.	Passed.
July 2	A. M. Watson	La Crosse	Cider	4.38	2.66	Present	Passed.
July 2	C. E. Mylrea & Co.	Kilbourn	Cider	4.47	2.25	Present	Passed.
July 2	C. E. Mylrea & Co.	Kilbourn	Cider	5.73	2.08	Present	Passed.
July 2	J. Gardiner	Spencer	Fruit vinegar	3.51	.27		Condemned.
July 2	J. Gardiner	Spencer	Cider	5.67	.63	Doubtful	Condemned.
July 7	Siefert & Fernholz	Jefferson	Cider	4.08	4.27	Present	Passed.
July 7	J. S. Parkinson	Windsor	Cider	4.11	2.26	Slight amt.	Passed.
July 7	A. Dietl	Wausau	White distilled	6.33			Passed.
July 7	A. Dietl	Wausau	Cider	4.65	4.22	Slight amt.	Passed.
July 7	Dr. A. Amer.	Janesville	Cider	4.59	2.73	Large amt.	Passed.
July 7	F. L. Powers	Plainfield	Cider	4.47	.66	None	Condemned.
July 7	F. L. Powers	Plainfield	Cider	3.75	.64	None	Condemned.
July 7	F. L. Powers	Plainfield	Cider	3.15	.21	None	Condemned.
July 14	Torsch & Fisher	Baraboo	Cider	4.11	2.61		
July 14	A. C. Nott & Son	Marinette	Cider	4.50	.85	None	Condemned.
July 14	A. C. Nott & Son	Marinette	Cider	4.95	5.12	Slight amt.	For'gn sugars
July 15	F. L. Warner	Randolph	Cider	4.59	2.32	Present	Passed.
July 15	F. L. Warner	Randolph	Cider	4.20	2.06	Slight amt.	Passed.
July 15	Schneller, Felix Co.	Prairie du Sac	Cider	4.53	2.61	Large amt.	Passed.
July 15	Schneller, Felix Co.	Prairie du Sac	Cider	4.02	2.58	Slight amt.	Passed.
July 15	O. W. Lloyd	Randolph	Cider	3.96	.53		Passed.
July 15	Jno. Beule	Fox Lake	Cider	4.65	4.11	None	For'gn sugars
July 15	H. G. Chase & Co.	Platteville	Cider	5.43	3.58	Large amt.	Passed.
July 21	O. G. Hubbard	Hancock	Cider	3.96	1.34	Slight amt.	Condemned.
July 22	H. M. Johnston & Co.	Glenwood	Cider	5.07	3.33	Slight amt.	Passed.
July 22	Chas. Trener	Mazomanie	Cider	4.53	1.69	Large amt.	Condemned.
July 22	F. E. Kellner	Centralia	White distilled	6.66			Passed.
July 22	Seidel Bros	Augusta	Cider	4.89	2.93	None	For'gn sugars
July 22	F. L. Warner	Randolph	Cider	4.21	2.65	Slight amt.	Passed.
July 23	Bach, Kiewig & Poser Co.	Kewaunee	Cider	4.65	3.47	Slight amt.	Passed.
July 23	Bargoust Groc Co	La Crosse	Cider	4.20	2.67	Present	Passed.
July 23	Bach, Kiewig & Poser Co.	Kewaunee	Cider	4.50	2.45	Present	Passed.
July 23	C. F. Voigt	Oshkosh	White distilled	4.05			Passed.
July 25	C. F. Voigt	Oshkosh	Cider	4.59	2.92	Present	Passed.
July 29	Samuel Hanson	Marinette	Cider	4.29	2.69		Passed.
July 29	Samuel Hanson	Marinette	Cider	4.44	2.81	Large amt.	Passed.
July 30	J. E. Tarrant	Fox Lake	Cider	4.64			Passed.
July 30	J. E. Tarrant	Fox Lake	Cider	4.56	.24		Passed.
July 31	Arthur Smith	Eau Claire	Cider	4.38	2.01	Slight amt.	Condemned.
July 31	Arthur Smith	Eau Claire	Cider	4.38		Slight amt.	Passed.
July 31	Elliott & Skougsted	Beloit	Cider	4.44	2.32	Present	Passed.
		(No. 1)					

Dairy and Food Commissioner.

Analysis of Vinegar —Continued.

1897.	Sample sent by—	Postoffice.	Sold by—	Sold as —	Acetic acid per ct.	Solids per ct.	Malic acid.	Comments.
July 31	Elliott & Skougsted	Beloit	(No. 2)	Cider	4.14	.43	None	Condemned.
July 31	Elliott & Skougsted	Beloit	(No. 3)	Cider	4.02	.76	Slight amt.	Condemned.
July 31	Elliott & Skougsted	Beloit	(No. 4)	Cider	5.04	3.93	Large amt.	Passed.
Aug. 4	G. A. Rickeman	Racine	F. C. Johnson, Kishw'kee Ill.	Cider	4.62	2.36	Present	Passed.
Aug. 4	G. A. Rickeman	Racine	Red Cross Vin Co., St. Louis	Cider	4.08	.27	None	Condemned.
Aug. 4	H. M. Johnston & Co.	Glenwood		Premium cider	5.67	2.07	None	Solids d'tful
Aug. 4	Miss F. H. Hawks	Delafield	Alden Vin. Co. St. Louis	Cider	3.09	.52	Traces	Condemned.
Aug. 5	Miss F. H. Hawks	Delafield	Alden Vin. Co. St. Louis	Cider	3.06	.52	Traces	Condemned.
Aug. 5	Miss F. H. Hawks	Delafield	Alden Vin. Co. St. Louis	Cider	3.06	.52	Traces	Condemned.
Aug. 16	Menominee Riv. Lum. Co	Menekaunee	Genesee Fruit Co., Lans'g, M	Cider	4.02	2.61	Large amt.	Passed.
Aug. 16	A. C. Nott & Son	Marinette		Cider	3.81	3.49	None	Condemned.
Aug. 16	A. C. Nott & Son	Marinette		Cider	4.29	.....	Large amt.	Passed.
Aug. 16	H. Bowman	Genesee		Cider	3.12	.78	Present	Condemned.
Aug. 16	H. J. Newell	Galesville		Cider	3.81	1.90	Present	Condemned.
Aug. 16	J. A. Stratz	Woodhull	Barrett & Barrett, Chicago.	Cider	4.32	1.50	Present	Condemned.
Aug. 16	Bergoust Groc. Co	La Crosse		Cider	4.98	2.98	Slight amt.	Passed.
Aug. 16	Bergoust Groc. Co	La Crosse		Cider	4.74	3.11	Slight amt.	Passed.
Aug. 16	W. C. Jacobs	Neenah		Cider	4.56	3.30	Traces	Passed.
Aug. 16	W. C. Jacobs	Neenah	H. J. Heinz & Co., Pittsburg	Cider	4.38	.....	Large amt.	Passed.
Aug. 16	W. C. Jacobs	Neenah	H. J. Heinz & Co., Pittsburg	Distilled	5.52	.....	.....	Passed.
Aug. 20	Amer. Vin. Wks	Milwaukee		Cider	4.35	4.13	Present	Passed.
Aug. 20	Elroy Mer. Co	Elroy	C. E. Meyer & Co., Freeport.	"Seek-No-Further"	4.66	.32	None	Condemned.
Aug. 20	Elroy Mer. Co	Elroy	C. E. Meyer & Co., Freeport.	Fruit	4.97	.30	None	Condemne d.
Aug. 20	Vale & Britson	Deerfield	Barrett & Barrett, Chicago.	Cider	4.11	2.48	Present	Passed.
Aug. 20	M. Koch	Seymour	Amer. Vin. Wks. Mil	Cider	4.44	2.79	Small amt.	Passed.
Aug. 27	A. F. Chase & Co.	Florence		Cider	3.78	3.00	Present	Acid below.
Aug. 27	C. C. Olin	La Crosse		Cider	4.17	2.63	Present	Passed.
Aug. 27	Mulder Bros	La Crosse		Cider	4.11	2.27	Slight amt.	Passed.
Aug. 27	Drew & Bullinger	Dale		Cider	4.23	2.70	Slight amt.	Passed.
Aug. 27	L. M. Larson	Menekaunee	Red Cross Vin. Co., St. L.	Cider	4.23	2.70	Slight amt.	Passed.
Aug. 28	H. S. Johnson	Janesville	Sprague, Warner & Co., Chicago.	Cider	4.11	2.97	Slight amt.	Passed.
Sept. 10	F. T. Gray	Antigo	Alden Vin. Wks. St. L.	Steuben Co. Cider	4.41	2.39	Large amt.	Passed.
Sept. 10	Solon A. Davidson	Waupun	Dean Bros. & Lincoln, Chicago.	Cider	2.94	.37	None	Condemned.
Sept. 10	H. S. Clifford	Beloit	Reed, Walsh & Lange	Cider	4.53	2.13	Large amt.	Passed.
Sept. 10	H. Goedecke	Kilbourn City	F. C. Johnson, Kishwaukeee.	Cider	4.56	1.15	Present	Condemned.
Sept. 10	Walther & Frederickson	Oconomowoc	Mich. Cider Co., Chicago.	Cider	2.55	3.00	Large amt.	Condemned.
Sept. 10	Geo. H. Persons & Co.	Tomah		Cider	3.96	1.28	Small amt.	Condemned.
Sept. 10	Emery & Searles	Evansville	Rosensteil & Son, Freeport	Cider	4.59	1.56	None	Condemned.
Sept. 10	Emery & Searles	Evansville	Rosensteil & Son, Freeport	Cider	4.56	.63	None	Condemned.

Report of the Wisconsin

Sept. 10	A. O. Wuensche	Berlin	Barrett & Barrett, Chicago	Cider	4.35	2.05	Large amt...	Passed.
Sept. 10	A. O. Wuensche	Berlin	C. E. Johnson, Kishwaukee	Cider	2.16	2.62	Large amt...	Condemned.
Sept. 10	H. S. Clifford	Beloit	Reed, Walsh & Lange	Distilled white	4.89			Passed.
Sept. 13	E. Richmond	Lodi	C. E. Meyer & Co., Freeport	Cider	4.62	.64	None	Condemned.
Sept. 15	E. Richmond	Lodi	Merriam, Collins & Co., Chicago	Cider				
Sept. 15	Rank Bros	Waupun		Cider	4.56	2.45	Large amt...	Passed.
Sept. 15	Eric Jacobson	Merrill	C. E. Meyers Co., Freeport	Cider	4.14	2.18	Small amt...	Passed.
Sept. 15	Wellauer & Hoffmann Co	Milwaukee	Mich. Cider Co., Chicago	Cider	4.67	2.66	Present	Passed.
Sept. 15	Wellauer & Hoffmann Co	Milwaukee	Mich. Cider Co., Chicago	Cider	3.93	2.88	Present	Passed.
Sept. 15	Geo. H. Persons	Tomah		Cider	4.62	2.37		Passed.
Sept. 17	O. F. Howen	Mondovi	Alden Vin. Co., St. L	Cider	4.05	.55		Condemned.
Sept. 23	G. Roemhild	Black Earth			3.18	.51		Condemned.
Sept. 23	G. Roemhild	Black Earth		Distilled white	4.23			
Sept. 23	G. Roemhild	Black Earth		Distilled brown	3.96			Passed.
Sept. 24	G. W. Benner	Darien	C. E. Meyer & Co., Freeport	Distilled brown	3.75	.27		Condemned.
Sept. 24	McAlpin Groc. Co	Beloit		Cider	4.50	2.57	Present	Passed.
Sept. 24	W. Hunter	Superior		Fruit vinegar	5.10	2.12	Large amt	Passed.
Sept. 24	F. N. Larson	Eau Claire	The P. Bechter Co., Mil	Cider	4.89	5.28	None	For sugars.
Sept. 23	H. S. Clifford	Beloit	Reid, Walsh & Lange, Chi	Holly cider vin	4.47	1.49	Large amt...	Condemned.
Sept. 23	A. C. Nott & Son	Marinette	Leroux Cider & V. Co., Tol	Cider	4.27	3.35		Passed.
Sept. 23	Jac. Hahn	N. La Crosse	Bo't by W. W. Chadwick	Cider	4.08	2.64	Present	Passed.
Sept. 23	W. Doerflinger	N. La Crosse	Bo't by W. W. Chadwick	Cider	3.72	.24	None	Condemned.
Sept. 23	J. McLeod & Co	Milwaukee	The P. Bechter Co., Mil	Retailed as cider	3.98	.29		Condemned.
Sept. 26	L. W. Holly	Oregon	Farmer's	Ci, der	2.70	1.14	Slight amt...	Condemned.
Sept. 28	Mrs. H. Giddings	Sheboygan Falls		Cider	2.34	5.51	Very l'rg amt	Unfermented.
Sept. 28	J. J. Owsley	Sparta	Barrett & Barrett, Chi	Ci er	4.05	2.19	None	
Sept. 29	G. H. Persons	Tomah	Sprague, Warner & Co., Chi	Cider	3.75	3.12	None	
Sept. 29	La Crosse Grocery Co	La Crosse		Cider	4.46	2.32	Slight amt...	
Sept. 29	Elliott & Skougsted	Beloit	Beal's vinegar	Cider	5.67	1.65	Present	Solids below.
Sept. 29	Elliott & Skougsted	Beloit	Rosensteil & Sons, Freeport	Cider	4.11	.81	Slight amt...	Condemned.
Sept. 29	L. M. Speer	Elroy		Cider	4.23	2.52	None	Doubtful s'ds
Sept. 29	L. M. Speer	Elroy		Cider	4.23	2.68	Large amt...	Passed.
Sept. 29	C. H. Shores	Osseo	The P. Bechter Co., Mil	Cider	4.86	6.29	None	For sugars.
Sept. 30	C. H. Shores	Osseo	C. E. Meyers & Co., Freeport	Cider	5.22	.46	None	Condemned.
Sept. 30	J. J. Carter	Menomonee	Red Cross Vin. Co., St. L	Cider	4.76	2.80	Present	Passed.
Sept. 30	J. J. Carter	Menomonee	Sprague, Warner & Co., Chi	Cider	4.00	2.75		Passed.
Sept. 30	Durland & Valentine	N. La Crosse	Bo't by W. W. Chadwick	Cider	4.77	2.93	Present	Passed.
Sept. 30	J. B. Turnbull	N. La Crosse	Bo't by W. W. Chadwick	Cider	4.77	2.52		Passed.
Sept. 30	M. S. Boma	La Crosse	Bo't by W. W. Chadwick	Cider	4.70	2.14		Passed.
Sept. 30	C. H. Hestad & Son	La Crosse	Bo't by W. W. Chadwick	Cider	4.19	2.61		Passed.
Sept. 30	W. Grams	La Crosse	Bo't by W. W. Chadwick	Cider	4.80	1.40	Present	
Sept. 30	F. Gregory	La Crosse	Bo't by W. W. Chadwick	Cider	4.23	.47	None	Condemned.
Sept. 30	C. L. Borresen	La Crosse	Bo't by W. W. Chadwick	Cider	4.47	2.80		Passed.
Sept. 30	Carlton & Anderson	La Crosse	Bo't by W. W. Chadwick	Cider	4.29	2.01		
Oct. 6	J. W. Calkins	Evansville	Barrett & Barrett, Chi	Cid-r	4.32	1.42		Condemned.
Oct. 6	Miles Rice	Milton	H. J. Heinz & Co., Pittsb'rg	Cider	7.14	3.34	Present	Passed.
Oct. 6	Arthur Smith	Eau Claire	Jas. Cushing & Son	Cider	4.47	2.60	Present	Passed.
Oct. 8	Arthur Smith	Eau Claire		Improved apple cider	5.46	.19	None	Condemned.

Dairy and Food Commissioner.

Analysis of Vinegar—Continued.

1897.	Sample sent by—	Postoffice.	Sold by—	Sold as—	Acetic acid per cent.	Solids per cent.	Malic acid.	Comments.
Oct. 8	Arthur Smith.....	Eau Claire.....	Sprague, W. & Co., Chicago.	Cider.....	3.75	3.18	.....	Acid below.
Oct. 8	F. L. Warner.....	Randolph.....	G. I. Robison, Mil.	Duffy's cider vin.....	3.90	3.80	.....	Acid below.
Oct. 8	F. L. Warner.....	Randolph.....	Red Cross Vin. Co., St. Louis	Cider.....	3.99	3.19	Present.....	Passed.
Oct. 8	Miles Rice.....	Milton.....	.....	Cider.....	5.16	2.39	Present.....	Passed.
Oct. 8	Miles Rice.....	Milton.....	.....	Cider.....	6.15	2.75	Present.....	Passed.
Oct. 8	Bergoust Groc. Co.....	La Rosse.....	.....	Cider.....	4.47	2.89	Present.....	Passed.
Oct. 8	H. Groves & Sons.....	Madison.....	.....	Cider.....	3.45	2.22	Present.....	Acid below.
Oct. 8	H. Groves & Sons.....	Madison.....	.....	Cider.....	4.59	2.73	Very slight.....	Foreign sug'rs.
Oct. 8	H. Groves & Sons.....	Madison.....	.....	Cider.....	5.34	7.73	Small amount.....	Added sugar.
Oct. 8	H. Groves & Sons.....	Madison.....	.....	Cider.....	2.94	7.79	Present.....	Added sugar.
Oct. 8	H. Groves & Sons.....	Madison.....	.....	White distilled.....	3.56	.....	.....	Passed.
Oct. 8	H. A. Dierfield & Son.....	Whitewater.....	.....	Cider.....	5.40	2.41	Present.....	Passed.
Oct. 8	H. A. Dierfield & Son.....	Whitewater.....	.....	Cider.....	4.11	.89	Present.....	Condemned.
Oct. 8	H. A. Dierfield & Son.....	Whitewater.....	.....	Cider.....	3.59	.....	Present.....	Condemned.
Oct. 8	H. A. Dierfield & Son.....	Whitewater.....	.....	Cider.....	2.21	5.19	Large amount.....	Unfermented.
Oct. 8	F. S. Dhooge.....	Ashland.....	Alden Vin. Co., St. Louis.....	Cider.....	2.85	.43	None.....	Condemned.
Oct. 8	Blume & Lodle Co.....	Ashland.....	.....	Cider.....	2.85	.41	None.....	Condemned.
Oct. 8	W. B. Curtis.....	Shell Lake.....	Red Cross V. Co., St. Louis.....	Cider.....	4.00	3.06	Slight amt.....	Passed.
Oct. 8	W. B. Curtis.....	Shell Lake.....	Red Cross V. Co., St. Louis.....	Cider.....	4.93	2.87	Slight amt.....	Passed.
Oct. 8	F. S. Dhooge.....	Ashland.....	The P. Bechtner Co., Mil.	White distilled.....	7.68	.....	.....	Passed.
Oct. 21	F. N. Larson.....	Eau Claire.....	Franklin, McVeagh & Co., Chicago.....	Cider.....	4.62	1.74	Large amt.....	Condemned.
Oct. 21	B. B. Borden & Son.....	Plainfield.....	C. E. Meyer & Co., Freeport	Cider.....	4.35	2.57	Slight amt.....	Passed.
Oct. 21	Arthur Smith.....	Eau Claire.....	Sprague, Warner & Co., Chicago.....	Cider.....	3.78	3.18	Small amt.....	Acid below.
Oct. 21	Schuller, Felix & Co.....	Prairie du Sac.....	Red Cross V. Co., St. Louis.....	Cider.....	4.08	3.69	Present.....	Passed.
Oct. 21	F. G. Holtz.....	Columbus.....	American Vin. Works, Milw.	Cider.....	4.85	3.45	None.....	Foreign solids.
Oct. 21	R. Stafford Co.....	Milwaukee.....	American Vin. Works, Milw.	Cider.....	3.90	2.25	Present.....	Acid below.
Oct. 21	J. P. Corry.....	Madison.....	.....	Cider.....	3.84	3.06	None.....	Condemned.
Oct. 21	F. G. Holtz.....	Columbus.....	.....	Distilled.....	7.65	.....	.....	Passed.
Oct. 21	F. G. Holtz.....	Columbus.....	John A. Tolman & Co., Chicago.....	.....	.....	.....	.....	.....
Oct. 22	G. B. Winsor.....	Wonewoc.....	.....	Distilled.....	3.85	.....	.....	Condemned.
Oct. 22	F. L. Warner.....	Randolph.....	Alden Vin. Co., St. Louis.....	Cider.....	2.82	1.85	Present.....	Condemned.
Nov. 18	Fuller & Johnson Co.....	Randolph.....	Farmer's cider.....	Cider.....	2.97	.41	None.....	Condemned.
Nov. 18	Gould, Wells & Blackburn Co.....	Madison.....	Wm. Henning, Chicago.....	XXXX Cider.....	3.96	2.23	Present.....	Acid below.
Dec. 1	D. E. Richardson.....	Spooner.....	.....	Brown distilled.....	2.82	.40	.....	Condemned.

Report of the Wisconsin

Dec. 1	D. E. Richardson	Spooner		Cider	3.09	.43		Condemed
Dec. 1	Brooks Bros.	Neepeosa	Red Cross Vin. Co., St. L.	Cider	3.90	1.58	Large amt.	Condemed
Dec. 1	C. B. Phillips	Janesville	F. C. Johnson, Kishwaukee	Cider	4.47	1.60	Present	Condemed
Dec. 8	Elliott & Skougsted	Beloit	C. E. Meyer & Co., Freeport	Cider	4.26	3.91	Present	Passed
Dec. 8	C. N. Cramer & Co.	Ashland	The P. Bechtner Co., Mil.	Cider	4.44	2.73		Passed
Dec. 8	C. N. Cramer & Co.	Ashland	The P. Bechtner Co., Mil.	Brown distilled	7.41			Passed
Dec. 8	C. N. Cramer & Co.	Ashland	Amer Vin. Wks., Mil.	White distilled	7.63			Passed
Dec. 8	A. C. Nott & Co.	Marinette	Leroux C. & V. Co., Toledo	Cider	3.33	2.90		Passed
Dec. 8	A. C. Nott & Co.	Marinette	The P. Bechtner V. Co., Mil.	White distilled	8.46			Passed.
Dec. 8	Hanley Bros.	Racine	(Bo't by W. W. Chadwick)	Cider	4.62	2.07	Present	Passed.
Dec. 8	F. Harbridge	Racine	(Bo't by W. W. Chadwick)	Cider	4.29	.81	None	Condemed.
Dec. 8	E. H. Brill Estate	Racine	(Bo't by W. W. Chadwick)	Cider	4.11	4.03	Large amt.	Passed.
Dec. 22	Wm. Weichert	Milwaukee	B't by N. J. Field	Sold as cider vin.	3.62	.59		Condemed.
Dec. 22	Mahnke & Mahnke	Manitowoc	A. M. Richter & Son (Bo't by N. J. Field)	White distilled	4.32			Passed.
Dec. 23	H. J. Meyer	Manitowoc	A. M. Richter & Sons (Bo't by N. J. Field)	White distilled	4.14			Passed.
Dec. 23	C. Reinke & Co.	Marinette	Miller, Pettingill & Foster (Bo't by N. J. Field)	Cider	3.45	.23	None	Condemed.
Dec. 25	Jos. Mlada	Manitowoc	A. M. Richter & Sons (Bo't by N. J. Field)	Cider	4.29	2.15	Present	Passed.
Dec. 23	Winegard & Co.	Green Bay	Leroux C. & V. Co., Toledo (B't by N. J. Field)	Cider	4.50	3.87		Passed.
Dec. 23	J. J. Halloin	Green Bay	Joannes Bros., Green Bay (Bo't by N. J. Field)	Cider	3.96	2.62		Passed.
Dec. 23	W. H. Gibson	Green Bay	Red Cross V. Co., St. Louis (Bo't by N. J. Field)	Cider	4.08	2.51		Passed.
Dec. 23	Otto Lanz	Marinette	Bo't by N. J. Field	Cider	3.72	2.67		Passed.
Dec. 21	F. Decremier			Cider	4.11	2.81		Passed.
Dec. 24	P. F. Temby	Mt. Horeb		Cider		1.95		Amt. insuf.
Dec. 24	H. A. Watson	Janesville		Cider	4.62	1.60		Condemed.
Dec. 24	A. E. Scholl	Whitewater	Farmer's cider	Cider	4.92	1.29		Condemed.
Dec. 24	A. E. Scholl	Whitewater	Rediske Vin. Co., Milw	Cider	2.88	3.02	Large amt	Condemed.
Dec. 27 1898.	J. Roehl		Bo't by N. J. Field, Milw	Crab vinegar	3.53	.40		Condemed.
Jan. 20	A. Halleritt	Milwaukee	The P. Bechtner Co. (Bo't by N. J. Field)	Cider	4.11	.33	None	Condemed.
Jan. 27	Nelson & Christianson	Deerfield		Cider	3.84	2.53		Passed.
Jan. 27	L. L. Olds	Clinton		Cider	3.06	.99	Present	Condemed.
Mar. 3	Gould, Wells & Black- burn Co.	Madison	Rediske Vin. Co., Milw	Cider	4.42	2.77	Present	Passed.
Mar. 3	Gould, Wells & Black- burn Co.	Madison	Rediske Vin. Co., Milw	White distilled	4.08			Passed.
Mar. 3	Gould, Wells & Black- burn Co.	Madison	H. J. Heinz Co., Pittsburgh.	Cider	4.38		Large amt	Passed.
Mar. 18	M. A. Garthus	Independence	Red Cross Vin. Co., St. L.	Cider	4.08	2.13	Present	Passed.

Analysis of Vinegar — Continued.

1898.	Sample sent by —	Postoffice.	Sold by —	Sold as —	Acetic acid, per ct.	Solids, per ct.	Malic acid.	Comments.
Mar. 18	M. A. Garthus...	Independence..	Amazon V. & T. Co., Davenport, Ia	Cider.....	4.29	27	None.....	Condemned.
Mar. 18	M. A. Garthus.....	Independence..	Amazon V. & T. Co., Davenport, Ia	White distilled	4.05	.....	.....	Passed.
Mar. 18	C. B. Button & Co.....	Rewey	Merriam, Collins & Co	Cider.....	3.84	31	None.....	Condemned.
Mar. 18	C. B. Burton & Co.....	Janesville.....	Barrett & Barrett, Chic.	Cider.....	4.23	2.22	Present	Passed.
Mar. 24	H. W. Cramer	Janesville.....	Red Cross Vin. Co., St. L.	Cider.....	4.35	3.69	.....	Passed.
Mar. 24	H. W. Cramer.....	Janesville.....	Red Cross Vin. Co., St. L.	Cider.....	4.14	2.11	.....	Passed.
April 19	F. N. Larson	Eau Claire.....	M. A. Gedney P. Co., Min'ap.	Cider.....	4.14	2.12	.....	Passed.
April 19	M. J. Regan & Bro	Eagle	Alden Vin. Co St. Louis.	Red Apple	4.35	2.75	.....	Present.
April 28	W. C. Rosenhauer.....	.....	.....	Cider.....	2.94	.52	None.....	Condemned.
April 22	G. W. Leisman.....	Whitewater.....	.....	Cider.....	3.57	2.03	.....	Condemned.
April 17	A. M. Reichter & Son	Manitowoc.....	.....	Cider.....	3.78	.92	.....	Condemned.
May 26	A. Garthus.....	Independence..	.....	Brown distilled	4.00	2.57	.....	Foreign sugar
May 26	A. Garthus.....	Independence..	.....	White distilled	4.92	.29	.....	Passed.
May 26	Morissy Bros.....	Lodi .....	.....	Cider.....	4.98	.....	.....	Passed.
May 26	S. D. Neilson.....	Racine .....	.....	Cider.....	4.44	20	None	Not cider.
June 4	Mrs A. Charles.....	Mineral Point	.....	Cider.....	4.20	2.36	None	Not cider.
June 4	G. Landwehr.....	Medford .....	.....	Cider.....	4.50	2.28	Present	Passed.
June 4	G. Landwehr.....	Medford .....	.....	Brown distilled	8.73	.....	.....	Passed.
July 2	McAlpin Grocery Co.	Beloit.....	.....	Brown distilled	8.55	.....	.....	Passed.
July 8	J. A. Koltes.....	Dane	Alden Vin. Co., St. L	Cider.....	4.56	1.49	.....	Condemned.
Aug. 24	L. L. O ds.....	Clinton.....	Home made	Cider.....	2.37	.90	None.....	Condemned.
Aug. 24	Engle Bros.....	Sun Prairie.....	Rediske Vin. Co., Mil.	Cider.....	4.23	2.41	Large am'unt	Passed.
Sept. 6	J. Lukwitz.....	La Crosse.....	.....	Cider.....	4.29	4.58	None.....	Foreign sug's.
Sept. 6	Mills & Miner.....	Waukesha.....	.....	Cider.....	4.00	2.20	None.....	Foreign sol's.
Sept. 6	Mills & Miner.....	Waukesha.....	.....	Cider.....	.54	1.46	.....	Fortified.
Sept. 6	Mills & Miner.....	Waukesha.....	.....	Cider.....	5.91	1.51	.....	.....
Sept. 20	Birkmose & Wiberg Co.	Hudson	H. J. Heinz Co., Pittsburg.	White distilled.....	1.68	.....	.....	Passed.
Sept. 20	Birkmose & Wiberg Co.	Hudson	M. A. Gedney Pickle Co., Minneapolis	White distilled.....	5.52	.....	.....	Passed.

HONEY.

Strained honey has, perhaps, been more subject to adulteration than most articles of food.

Glucose.
adulterant.

The common adulterant is glucose syrup. As a rule jars or glasses holding from six to eight ounces of glucose are put up, containing in addition a small portion of buckwheat or other strongly flavored honey in the comb. This small piece of comb honey, with possible fragments of the bees, lends a genuine appearance and gives it its characteristic flavor.

Composition.

Natural honey is essentially a mixture of invert sugar, that is, consists of glucoses, dextrose and laevulose. The laevulose being stronger in rotatory power than dextrose at the ordinary temperature, pure honey turns the plane of polarized light to the left. After inversion honey should be but slightly more laevo-rotatory than originally. Glucose syrup consists largely of dextrin and dextrose, with varying smaller amounts of maltose. Commercial glucose syrup ordinarily has a dextro-rotatory power of from 150 to 170 degrees of the cane sugar scale when the normal weight is used.

Detection of
adulteration.

Glucose syrup then is shown to be present when the honey is strongly dextro-rotatory, and this property is not lost to any extent upon inversion. When cane sugar is added to honey, the sample will be dextro-rotatory according to the per cent. present, but after inversion will be laevo-rotatory. The per cent. of cane sugar can be approximately calculated from the difference.

Sulfuric acid
test for
glucose.

A ready test which gives valuable indications of the presence of large amounts of glucose syrup depends upon the fact that when concentrated sulphuric acid acts upon glucose sulphonation takes place, producing fluid products. When honey or cane sugar is similarly treated, a great amount of heat is evolved, and the mass swells to five or six times its volume, producing a spongy, charred, solid mass. This test may be readily performed by adding 15 cc. of concentrated sulphuric acid to an equal amount of honey in a tall beaker and rapidly mixing with a stirring rod. The test affords no quantitative results, however, and the presence of small amounts of honey or cane syrup are

Report of the Wisconsin

sufficient to produce the swelling and carbonation. It will, however, under these circumstances, take place more slowly.

The results of the examination of eighteen samples of honey are here tabulated, three of which are shown to be adulterated, two containing glucose syrup.

Date.	Samples sent by	Post Office.	Polarization.		Remarks.
			Direct.	Indirect.	
1897.					
Feb'y 24	.....	Madison.....	-13.9	.....	Genuine.
Feb'y 24	Franklin, McVeagh & Co., "California White Clover Comb Honey"	Chicago	108.1	102.6	Glucose. Sent by N.E. France, Platteville.
Feb'y 24	.....	.....	31.1	.....	Adulterated.
April -	Herman Inse. (Sold by E. R. Pahl & Co.).....	Milwaukee.....	-15.2	.....	Genuine.
May 26	John Haemann.....	Watertown.....	-24.6	-27.	Genuine.
Oct. 21	Fred Karnopp.....	Sheboygan.....	-11.5	-20.1	Genuine.
1898.					
March 11	I. Karger	Milwaukee.....	150.	136.	Glucose.
May 24	D. B. Bailey	Appleton .....	.....	.....	Genuine.
July 13	Bo't of Schacht Bros., "Pure Honey, J.A.Lamon, Chicago."	Racine	-18.	-22.6	Genuine.
Sept. 1	Ehrlich's Department Store.....	Fond du Lac.....	-6.8	-13.6	Genuine.
Sept. 21	E. R. Pahl & Co.....	Milwaukee.....	-6.5	-11.2	Genuine.

SYRUPS.

The syrups on the market are sold largely under fanciful trade names, such as "Crystal Drips," and are seldom sold as cane syrup or otherwise. All of the syrups so far examined have been found to contain glucose. As properly-made glucose is a wholesome food, these syrups would be recognized as ordinary articles of food, but should then be labeled as "mixed" or "compound" syrups, in accordance with the law.

Doctored
syrup.

Coloring with aniline colors is sometimes practiced. Bleaching is also frequently resorted to, and soured syrups are neutralized and reboiled. The latter goods are unquestionably deleterious and their sale should be suppressed.

FLAVORING EXTRACTS.

After the passage of the pure-food law examination was made of the flavoring extracts then upon the market. In this work advantage was taken of the dextro-rotation of lemon oil solutions in alcohol. A rough estimate of the amount of alcohol present was obtained from the specific gravity of the extracts. The presence of sugar or other solids in material amount would vitiate results obtained in this manner. Oil of lemon, having a specific gravity of .750, is sufficiently near that of alcohol not to materially affect these results where the oil is present in quantities of less than 5 per cent. The results obtained in the preliminary examination are set forth in the appended table, and show that the lemon flavoring extracts then on sale contained alcohol in amounts varying from 14 to 93 per cent., by weight, and amounts of lemon oil varying from zero to 8 per cent. The investigations, moreover, seemed to show that many of these extracts contained oils foreign to oil of lemon, but that these were used in exceedingly small amounts. Before proceeding further it was found desirable to formulate a systematic method for the examination of these extracts.

LEMON EXTRACTS.

Tabulated Results of Preliminary Examination of Lemon Extracts, made in May, 1898.

	Rotation.	Alcohol. Per. ct.	Per cent.
Wellauer & Hoffman (Acme).....	0.3	35.25	0.1— Oil lemon.
Puritan Standard	0.4	32.56	0.1 (Lemon grass.)
Acme.....	0.5	27.93	0.15 Oil lemon.
Gillett's.....	15.7	.....	4.62 Oil lemon.
Souder's.....	0.6	41.80	0.2 Oil lemon.
Household.....	0.9	.....	0.25 Oil lemon.
Van Duser's.....	15.4	91.18	4.53 Oil lemon.
Dr. Price's.....	20.8	83.9	5.90 Oil lemon.
Rival Extract (K. & D.).....	0.3	37.39	0.1 Oil lemon.
Drake Bros. (druggists).....	18.8	86.8	5.53 Oil lemon.
Economy.....	0.0	16.46	None Oil lemon (capsic.)
Fisher's (Hilbert's old).....	12.0	74.0	3.53 Oil lemon.
Meisner & B's Triple ext. bulk....	1.6	58.27	0.47 Oil lemon.
Chapman's (C. S. & Co.).....	9.9	71.88	2.91 Oil lemon.
Souder's (new uncolored).....	0.4	44.64	0.1 Citral.
Burnett's.....	28.0	93.18	8.24
French Standard Lemon.....	0.4	39.30	0.1 Oil lemon?
Phoenix Extract.....	4.0	72.52	1.2 Lemon grass.
Bastine's.....	8.2	80.13	2.41 Oil lemon.
C. C. C. Favorite.....	0.0	13.92	None Citronella (nutmeg.)
Livesey's Lemon (Mil.).....	7.3	70.04	2.1
Chapman's.....	9.9	71.88	3.0

As no standard methods were in use for the examination of lemon flavoring extracts, it was thought desirable to make systematic examination of the oils used, to devise suitable methods for the examination of these extracts.

Properties of
lemon oil.

Optical methods have proved most satisfactory for this purpose. The following table gives the behavior of oil of lemon and of the various oils and substances used in the production of adulterated and sophisticated lemon extracts.

OPTICAL CONSTANTS OF ESSENTIAL OILS.

	ROTATION IN ALC.		Rotation of oil.	Refract. at 30C.
	5 per cent.	1 per cent.		
Oil of Lemon, (F. B.).....	13.4	3.3	64.	67-71
Oil of Lemon, (D. B.)	16.2	3 2	63.2	68-72
Oil of Lemon, (S.)				68-72
Oil of Lemon, (H.)	16.5	3.3	64.3	67-71
Oil of Limes, (E. & A.).....	9.2	1.8	36.	83-87
Limonene, (E. & A.).....	9.2	1.8	36.	87-95
"Soluble Oil Lemon," (F. B.).....	1.7	.3	7.	82-98
"Citral 80 per cent." com.....	1.5	.3	5.9	80-86
Oil Lemon grass, (D. B.).....	-1.2	-.2	-4.7	80-90
Oil Lemon grass, (F. B.).....	-1.1	-.2	-4.3	83-95
Oil Lemon grass, (F. B. double rect.).....	-1.6	-.3	-6.3	82-90
Oil of Citronella, (D. B.)	-2.8	-.6	-10.9	78-83
Citronella aldehyd., (F. B.).....	1.7	.3	6.6	36-38
Oil Turpentine				59-61

The rotation was determined in the Schmidt & Haench sugar polariscope upon the solution in a 200 mm. tube, using the cane sugar scale. The figures given in the column for the concentrated oil are recorded in circular degrees.

Refraction
of oils.

The refraction is given in degrees from the butyrorefractometer of Zeiss at a constant temperature of 30 degrees. It will be noticed that many of the oils exhibited wide dispersive power which later property proves a valuable aid in their detection in the precipitated oil obtained in small quantities from flavoring extracts in the process of examination.

Rotation of
oil lemon.

From these constants it will be seen that oil of lemon will produce a dextro-rotation of about 3.4 degrees for each per cent. of oil present in alcoholic solution when examined under above conditions.

Citral.

Soluble oil of lemon or commercial citral can only be used in amounts of 0.33 per cent. or less, owing to the pronounced flavor. Upon this basis, the largest quantity of these oils which could be used in an ex-

tract would produce an effect of 0.1 to 0.2 degrees, or about the same effect as 0.1 per cent of oil of lemon.

Lemon grass.

Oils of lemon grass, citronella and citronella aldehyde are used in much smaller amounts, so that while their tendency is to counteract the optical effects of oil of lemon, their actual effect is wholly insignificant. All are used in amounts less than 0.1 per cent.

Oil limes.

Oil of limes is slightly more expensive than lemon, and equally insoluble in weak alcohol. There is, therefore, no incentive to its use.

Limonene.

The same may be said of limonene, but if either of these were used they would be indicated by the greater refraction of the recovered oil.

Oil lemon, estimation.

In the absence of sugar, then, the oil of lemon may be readily determined in flavoring extracts by polarizing the extract in a 200 mm. tube, and dividing the results by 3.4. A ready check upon the quantity of oil thus found and a portion of the oil may be obtained for examination with the refractometer, by the following process. A flask similar to a Babcock skim-milk bottle is obtained. This bottle should have a capacity of approximately 80 cc., and have two necks, the larger tube entering at the side and passing almost to the bottom of the flask, and the smaller (used for measuring the precipitated oil) should be about 3 mm. internal diameter, and 14 cm. in length. Such a tube will contain 1 cc. between its extreme graduations. These should be divided into ten equal parts, and each tenth sub-divided into fifths. Each of the smallest divisions will then indicate 2 per cent. of oil when 10 cc. of extract is used. For the purpose of examination, 10 cc. of the extract is pipetted into the flask above described. About 10 drops of concentrated hydrochloric acid are added (sulphuric acid must not be used), together with 30 cc. of warm water. The flask is then placed in water at about 70 degrees c. with occasional shaking until the oil separates, which will usually take about 30 minutes. The flask is then filled with warm water by means of the side tube and whirled in the centrifuge, thus bringing the oil into the graduated neck. Fairly satisfactory results may be obtained with the ordinary Babcock bottle, but the precipitation is not as complete as when a larger proportion of water is used, and the measurement of the oil is unsatisfactory unless 20 cc. of the extract is

used. Recovery of the oil by the above process is most complete with extracts containing 5 per cent or more of oil. As a rule a 6 per cent. extract would yield 4.8 per cent. by precipitation; a 5 per cent. extract, 3.8 per cent., and a 2.5 per cent. extract, about 1.2 per cent. The results found by precipitation should then be corrected accordingly, after which the results should agree within .2 per cent. of those obtained by polarization, unless foreign optically active substances are present.

Correction
for solubility.

Soluble
oil lemon.

Soluble oil of lemon is recommended to be used in amounts of about 0.33 per cent. only, but if used in larger amount the greater proportion would be precipitated by this method. Three per cent. may be recovered from a 5 per cent. mixture in stronger alcohol.

Limonene
valuable.

The claim is frequently made that undesirable limonene is all that is excluded by making an extract weak in alcohol, and subsequently clarifying with magnesia. This statement is misleading. With the limonene sample obtained from Eimer & Amend, 3.4 per cent. was recovered from a 5 per cent. solution by the above method, showing that in very weak alcohol (about 12 per cent.) it is even more soluble than pure oil of lemon.

In recovering oil from extracts containing less than 2.5 per cent. of oil, and which are always weak in alcohol, 20 cc. may be used for precipitation. A portion of the precipitated oil may be removed with a 2 cc. pipette and examined with the refractometer. If pure oil of lemon has been used, the refraction will be normal, as given in the table.

Abnormal
refraction.

Oil of limes, limonene, or citronella would be indicated by a higher refraction, as would soluble oil of lemon. Citronella aldehyde and oil of lemon grass would tend to lower the refraction, but neither could be used in an extract in quantities sufficient to greatly alter the refraction.

Alcohol.

For the accurate determination of alcohol 25 cc. pipetted into a 100-110 cc. sugar flask, about 2 cc. each of concentrated solution of AlCl_3 and Na_2HPO_4 are added and the flask is filled to 110 cc. with water, and the contents shaken. This is then filtered through a dry filter and 100 cc. of the filtrate, together with 25 cc. of water, are distilled to 100 cc. received

in the same sugar flask, and the alcohol found from the Sp. Gr. of the distillate. This figure plus 1-10 and multiplied by four will give the alcohol per cent. The precipitated AlPO_4 entangles the oils and facilitates their removal by filtration. In most cases, however, it is sufficient to prove the absence of sugar, glycerine or solid extract by evaporating 10 Gms. on the water bath. These substances being absent and the specific gravity of oil of lemon and stronger alcohol being nearly identical (oil of lemon .850 and stronger alcohol .820), when an extract does not contain over 5 per cent. of oil of lemon, the alcohol may be approximated to within less than 1 per cent. by estimating from the specific gravity of the extract itself.

(The liability of error decreases rapidly as the alcohol passes below 75 per cent., owing to the impossibility of there being sufficient oil of lemon to materially interfere.)

Methyl alcohol.

Methyl alcohol may be looked for by adding 10 cc. of a fresh 1 per cent. solution of sodium nitro-prusside to an equal volume of extract and then making the mixture strongly alkaline with ammonia. Within a few moments a red color will appear when wood alcohol is present. The oil of lemon does not interfere.

Unfortunately this test is valueless for detection of the more purified grades of methyl alcohol, such as "Columbian Spirits" and "synthetic alcohol." These can only be detected by the more complicated tests, as described in "Allen."

Vapor tension.

The presence of methyl alcohol is readily indicated by the increased vapor tension. If a solution of ethyl alcohol and water is prepared of the same specific gravity as the sample in question and portions of each are injected into sealed tubes having Torricellian vacua, the methyl alcohol will be indicated by a considerably greater fall of the mercury in the tube containing the suspected sample.

Coloring matters.

The lemon extracts on the markets are generally colored by aniline dyes. Curcuma is seldom used owing to its liability to fade. Indications of the coloring matter used are frequently yielded upon the addition of hydro-chloric acid to the extract in the process of precipitation of the oil. Sulphonated azo dyes (tropaeolins) are frequently used and react pink or red

upon the addition of hydro-chloric acid. Di-nitro-cresol is frequently used and indicated by the bleaching of the solution upon the addition of the acid. The coloring matters are best obtained by evaporating the alcohol and dyeing skeins of wool with the aqueous solution of the dye. Colors may then be identified as indicated in Weyl's "Sanitary Relations of the Coal Tar Colors."

LEMON EXTRACTS EXAMINED.

March 11, 1898.	Atwood & Steele. Alcohol 78.33, oil lemon 2.3 per cent. Refraction 60 to 65 degrees. Colored.
March 25, 1898.	"Chapman's Lemon." Polariscopes reading 14.9, oil lemon 4.4 per cent.
March 25, 1898.	"Challenge Lemon." Alcohol 75.2 per cent., polariscopes reading 11.3, oil lemon 4.2
April 6, 1898.	"Carnival Brand." Alcohol 61.5, polariscopes reading 6.9, oil lemon 2.1 per cent.
April 6, 1898.	Wright's Standard. Alcohol 16.45, polariscopes reading 0.2, oil lemon 0.1.
May 23, 1898.	Lemon Extract purchased from David Dickson, Milwaukee. Alcohol 21 per cent. by weight, polariscopes reading 0.2, oil of lemon 0.1. Coloring matter naphthol yellow.
May 26, 1898.	Lemon Extract. Modjeska, Roth & Co. Alcohol 59.2, oil lemon 0.4.
July 1, 1898.	Lemon extract bought of Charles Livingston, Kenosha. "Special Extract Lemon," Lakota Manfg. Co., Chicago. (Said to be made by Gillette & Co., Chicago.) Alcohol 20.6 per cent., polar. reading 4.6, cane sugar 1.31 per cent., rotation due to oil 0.6, equivalent to .2 per cent. oil of lemon. Colored.
July 5, 1898.	"White House Brand." sent by G., W. & B., Madison. Alcohol 72.74, polar. reading 13.5, equivalent to 4 per cent. oil lemon. Colored.
July 5, 1898.	"Union Triple Extract Lemon." Steele-Wedeles, Chicago. Alcohol 94.28 per cent., polar. reading 23.1, oil lemon 6.7 per cent. Color lemon peel only.
July 21, 1898.	Bo't at Fair Store, Madison, July 6, "Globe Extract Lemon," Chicago. Alcohol 7.93 per cent., polar. reading 0.0, oil lemon none. Colored.
Aug. 22, 1898.	Grand Union Tea Co. Lemon. Alcohol 80.75 per cent., polar. reading 12.2, oil lemon 3.6 per cent.
Aug. 24, 1898.	Franklin, McVeagh & Co., "Mammoth" Lemon. Alcohol 35.05 per cent.
Aug. 24, 1898.	"Chapman's Ten Cent Lemon—New" Alcohol 71.7 per cent., polar. reading 21.5, equivalent to 6.3 per cent. oil. Precipitation with correction showed 5.6 per cent oil; difference due to presence of sugar. Color tropeolin.
Sept. 5, 1898.	"Standard Extract Lemon," Wisconsin Tea Co., Milwaukee. Alcohol 13.5 per cent., oil lemon traces. Aniline color.
Sept. 5, 1898.	"Monarch Brand Lemon," Reid, Murdock Co., Chicago. Alcohol 94.66 per cent., polar. reading 25.7, equivalent to 7.5 per cent. oil lemon. Precipitation yielded 7.3 per cent. oil lemon, refracton 65-69.
Sept. 5, 1898.	"Bon Ton Favorite Extract Lemon," sold by Wm. Grossman, Milwaukee. Bought of E. H. Welsh, Waukesha. Labeled "Bon Ton Chemical Works, Chicago." Alcohol 22.85 per cent., polar. reading 0.1, oil lemon trace. Color di-nitro-cresol.
Sept. 14, 1898.	Lemon Extract, bought of A. Lichtenberger, Oshkosh. Alcohol 22.8 per cent., polar. reading 0.0, oil lemon none.
Sept. 14, 1898.	"Fisher's Extract Lemon," manuf. by A. J. Hilbert & Co., Milwaukee. Alcohol 89.9 per cent., polar. reading 20.8, equivalent to 6.1 oil lemon. Precipitation yielded 6.2 per cent. oil, of refraction 63-68.
Sept. 15, 1898.	"Dr. Price's," bought of R. H. Seltzer, Waukesha. Alcohol 85.3, polar. reading 21.0, equivalent to 6.2 per cent. oil lemon. Precipitation gave 6.5 per cent. oil, refraction 64-68.
Sept. 15, 1898.	Lemon Extract, manuf. by Ed. Dewey, Milwaukee. Alcohol 88.1, polar. reading 15.3, equivalent to 4.5 per cent. oil lemon. Precipitation showed 4.3 per cent. oil, refraction 64-68.
Sept. 15, 1898.	"Dieter's Double Strength Lemon," bought of A. Watterson Weyauwega. Alcohol 55.4 per cent., polar. reading 1.8, equivalent to 0.5 per cent. oil lemon. Color di-nitro-cresol.
Sept. 15, 1898.	Lemon Extract bought of H. F. Wilcox, drugst, Weyauwega. Alcohol 92 per cent., polar. reading 15.9, equivalent to 4.9 per cent. oil lemon. Precipitation gave 5 per cent. oil, refraction 64-68.
Sept. 30, 1898.	"Souders' New Cream of Fruit." Polar. reading 18., equivalent to 5.3 per cent. oil lemon. Precipitation gave 5.3 per cent. oil, refraction 64-67. Uncolored.
Sept. 30, 1898.	"Seeley's Lemon." Alcohol 68.4, polar. reading 5.3, equivalent to 1. oil lemon.

VANILLA EXTRACTS.

The examination of vanilla extracts has until now proved a perplexing problem. The lower grades of vanilla extracts on the market were largely extracts of tonka with varying amounts of vanillin or of vanilla extract. Almost all of these were colored either with caramel or aniline dyes. The latter are coming into great favor. The separation of vanillin and cumarin and their quantitative determination has offered considerable difficulty to the analyst. This problem has probably been solved by the work of Messrs. Hess & Prescott, as published in the journal of the A. C. S.

Caramel.

The sodium-bi-sulphite method for the separation of vanillin is unsuited for the work of the ordinary food analyst, who is generally compelled to work upon an exceedingly small amount of the material. Where caramel is present in large quantity, it can generally be precipitated by the addition of paraldehyde and sufficient alcohol to effect solution. The caramel will form a sticky mass in the bottom of the tube upon standing over night. The coloring matter of vanilla is completely precipitated by liquor of sub-acetate of lead. While this re-agent precipitates the bitter principal, it does not remove the coloring matter from solution.

CREAM OF TARTAR.

Perhaps no substance has been more subject to adulteration and sophistication than cream of tartar. As a rule the cream of tartar purchased in the drug stores has been at least commercially pure, the only impurities being small amounts of tartrate of lime and sulphate of lime. Examination of the samples of cream of tartar purchased from the grocers show that true cream of tartar was seldom met with, but a substance sold as phosphatic cream of tartar was largely substituted for it.

Cream tartar
substitutes.

This substance consisted of calcium acid phosphate and starch and of calcium acid phosphate, alum and starch. In a few instances cream tartar in the commercially pure state was furnished.

The following are the results of examinations of cream tartar samples purchased:

CREAM OF TARTAR ANALYSES.

Date.	Samples sent by	Post Office.	Remarks.
1897.			
Nov. 3	Joannes Bros. (Sold by John Robinson)	Green Bay....	Nearly pure. Calcium tartrate small amount.
Nov. 3	Joannes Bros. (Sold by Apgar & Co., Chicago)	Green Bay....	Pure.
Aug. 4	G. A. Rickeman. (Sold by J. G. Flint, Milwaukee).....	Racine	Pure.
1898.			
April 6	Wm. Kuehe. (Sold by C. E. Andrews & Co.).....	Milwaukee....	Composed of flour and calcium acid phosphate. Cream of tartar absent.
April 6	Paul Arndt. (Sold by Atlantic Tea Co., Milwaukee)	Milwaukee....	Flour & calcium acid phosphate.
April 18	Bought of S. P. Schadel.	Milwaukee....	Calcium acid phosphate, starch. Cream of tartar, none.
April 18	Latsch & Sons	Winona, Minn	Cream of tartar, calcium acid phosphate and flour.
June 3	Guenther Carberg. (Bought by W. W. Chadwick).....	Neenah.....	Pure.
June 3	C. Paul & Co. (Bought by W. W. Chadwick).....	Neenah... ..	Pure.
June 3	H. Uvaas & Co. (Bought by W. W. Chadwick).....	Neenah.....	Calcium acid phosphate, starch and cream of tartar.
June 3	B. B. Bailey. (Bought by W. W. Chadwick).....	Appleton	Pure.

BAKING POWDER.

Baking
powder
branding.

The present law requires the branding of all baking powders containing alum in any form, with the words "THIS BAKING POWDER CONTAINS ALUM." The need of this law was very urgent, as at the time of its passage many brands of baking powder were on the market, varying in quality from the cheapest powders, composed of only bi-carbonate of soda and alum, together with filler (starch), the latter often amounting to as high as 50 per cent., to baking powders composed of better grades of soda alum, especially prepared, and mixed with acid phosphate of lime, bi-carbonate of soda and filler in necessary amount. All of these powders were placed on the market under claims of purity; many of them were apparently guaranteed to contain pure cream of tartar, and to be free from lime, alum, ammonia, etc. The cheaper and more inferior the powder the more extravagant were the claims made for it in most instances. The following quotation will show the evident intent to deceive on the part of these unscrupulous manufacturers:

"Delicatesse—Warranted Cream Tartar Baking

Powder Co., New York, U. S. A." (The foregoing being stamped upon the tin cover, without any punctuation whatever.) Mnfg. by "The Cream Tartar Baking Powder Co., New York, U. S. A." In two other places on this can apparent guarantees are given for the purity of this baking powder, and the formula is given for the manufacture of a pure cream tartar baking powder, as follows: "How to make a STRICTLY PURE CREAM TARTAR BAKING POWDER," (leaving the purchaser to presume that the formula referred to the contents of this package).

The facts in this instance were that no such company existed, and that the powder was said to be made in Ohio. The powder was one of the cheapest forms of alum baking powder, costing the manufacturer not over four cents per pound.

Claims of
manufacturers

The manufacturers of alum baking powders base their claims as to the injustice of this law upon statements that the alum used in these powders is precipitated and rendered insoluble into the bread by the heat used in baking, and that injury from its use has not been proven. They, therefore, claim that its use in baking powder should not be restricted. The weakness of this stand is readily seen when it is recalled that in all food legislation two objects are to be attained: First, the prohibition of the sale of injurious food products; and, second, the prevention of fraud.

Alum powders
suspicioned.

All baking powders are chemical compounds used for the leavening of foods. It is then but fair that those containing substances viewed with suspicion by the public should be so marked as to inform the purchasers of their true composition and character. The benefit from legislation of this kind can best be shown by citation of one of the points involved in a case prosecuted by this department.

Instance of
deception
practiced.

A tea merchant of Milwaukee, having several stores, sold, in conjunction with tea and coffee, two brands of baking powder. The one marked "Best" was sold at 50 cents a pound, and several prize tickets given with each of such sales. Under a different label a baking powder was retailed at 20 cents, with the price plainly printed upon the label. Upon examination, both of the powders were found to contain alum and to be exactly alike in composition. The facts

here demonstrated were that where parties wished to obtain a high-grade baking powder and were willing to pay the price necessary for the purchase of one manufactured from the most expensive materials, they actually did obtain in this instance the same baking powder as was retailed at 20 cents per pound, and which cost the manufacturer not to exceed seven cents per pound, and the only mitigating circumstances were that it was in that case furnished with several tickets for the prize.

Wholesomeness.

As to the wholesomeness of alum in baking powders, this is entirely a secondary matter, and one which is equally hard to prove or disprove. Certain experiments made by Sutton and Patrick have inclined them to the belief that the alum was largely, if not wholly, rendered insoluble in bread made by the use of alum in baking powder. On the other hand, an exhaustive series of experiments performed by W. D. Bigelow and C. C. Hamilton (*Journal A. C. S.*, Vol. 16, page 587) seemed to conclusively show that hydrate of alumina itself has the same hindering effect upon digestion as does alum through its solution in the acids of the gastric juices. (No gastric digestion can take place except in the presence of an excess of acid) and finally that aluminum phosphate seemed to have greater power in retarding digestion, both gastric and pancreatic, than either alum or hydrate of alumina. Under these circumstances, it is no more than just that every consumer should have the right of proof that a baking powder is manufactured free from such ingredients as he views with suspicion.

False list.

Advantage was taken at the time of the passage of this law by certain unscrupulous advertisers of cream of tartar baking powders, in issuing pamphlets purporting to come from this department and containing lists of baking powders said to contain alum. In that list were included several cream of tartar baking powders of undoubted purity, and which ranked as high, if not higher, than those of which the extravagant claims were made by the advertisers.

BAKING POWDERS.

- 1897.
- March 20. "Delicatessen" Baking powder. The label of this powder apparently guarantees the contents to be a pure cream of tartar baking powder. It contains no cream of tartar or acid phosphate, its acid ingredient being soda alum.
- 1897.
- June 3. Sent by Alex. Findlay Co., Madison. Supposed to be cream of tartar. Composed of calcium acid phosphate, soda alum and filler.
- Sept. 29. Sent by A Winegard & Co., Green Bay. Sold in bulk. Composed of soda alum, acid phosphate and filler.
- Aug. 18. Sent by Vale & Britton, Deerfield. "Pure Cream Baking Powder," Boston Baking Powder Co., Fairport, N. Y. Consists of soda alum, calcium acid phosphate and filler.
- 1898.
- May 26. "New York Tea Co.'s Best Baking Powder." Bought by N. J. Field. Price fifty cents. Contains soda alum, calcium acid phosphate, bi-carbonate of soda and filler. Cream of tartar absent.
- May 26. Baking Powder bought by N. J. Field of New York Tea Co., price paid twenty cents. Composition was apparently identical with the best, sold at fifty cents.
- June 28. Bought of Chas. Livingston, Kenosha. Seven Brothers' Baking Powder. H. H. & Co. Composed of soda alum, small amount of calcium acid phosphate, bi-carbonate of soda and filler. Not labeled as containing alum.
- June 28. Bought of Chas. Livingston, Kenosha. "Hotel Baking Powder." Randolph Manfg. Co., Chicago. Composed of soda alum, bi-carbonate of soda and filler. Not labeled as containing alum.
- July 15. Chicago Yeast Powder. Made by Chapman, Smith & Co., Chicago. Contains soda alum. Mr. Rose, agent, told Mr. Soren Nelson, grocer, of Racine, that this powder did not need an alum label. Labels were afterwards furnished by the company, which did not conform to the law.
- July 21. Sold by Kaiser Bros., Madison. Imperial Baking Powder. Composed of soda alum, calcium acid phosphate, bi-carbonate of soda and filler. Not labeled as containing alum.

FLOUR.

Compounding. Since the passage of the U. S. law governing the compounding of flour additions of corn flour to wheat products without proper labeling have practically ceased. Samples of suspected wheat flour sent for examination have invariably been found to contain excessive amounts of low-grade flour approaching middlings.

Buckwheat. Buckwheat flour has been much adulterated in the past, but as the present price of wheat flour leaves but little incentive for its adulteration, it has greatly diminished. Several samples have been examined and found to contain wheat flour and middlings.

Photographic records made. It has been found expedient to make photo-micrographs where prosecutions are brought for evidence of this form of adulteration. It is thus possible to offer in evidence and bring before the judge and jury

Report of the Wisconsin

photographs of the magnified buckwheat flour, the pure adulterant, and the mixture in question, each magnified the same number of times, thus enabling the jury to see for themselves the extent of the adulteration and the certainty of the presence of the adulterant.

FLOURS.

WHEAT FLOUR.

1898.
March 3. Brannan & Kirwan. Gratiot. Examined for corn or corn starch. None present. Pure.

BUCKWHEAT FLOUR.

1898
March 10 Sent by B. M. Minch, Madison. Pure.
Aug. 5. Sent by Bach, Kiewig & Poser Co., Kewaunee. Contains at least 25 per cent. wheat flour.

COFFEE.

The low price of coffee during the last few years has driven out of this market the fraudulent beans formerly manufactured, and during the last three years none of these have been met with.

Unground coffee is generally cheapened by the admixture of screenings and shrunken beans. The latter are black and bitter, and removed by hand picking from the better grades of coffee generally shipped here from the European markets.

Glazing of.

These are roasted, colored and glazed so as to be hardly noticeable when mixed with normal beans in amounts even as high as 50 per cent. The glazing of coffee has been excused on the ground that the glazing helped to retain its aroma and strength. It, however, proves to be a cloak for the sale of blighted, extracted and inferior material. All glazing and coloring should be absolutely prohibited.

MUSTARD.

Much of the dry mustard on the market at the beginning of 1897 was found to be reduced with wheat starch in the form of flour or middlings. The amount of adulterant present varied from 20 to 60 per cent.

Claims were made by the manufacturers and wholesalers that the addition of an adulterant was necessary, both for the proper milling of the mustard and for the purpose of making it palatable and suitable for food. Assertions were even made that no pure mustard in the dry form was for sale at that time. The better class of manufacturers, however, insisted that a large part of their sales were of the pure article and that they would be glad to see the sale of reduced dry mustard suppressed. No samples have been found so far which have been adulterated with gypsum of other mineral matter. The only forms of adulteration so far discovered have been the addition of starch and coloring matter. The coloring matter has generally proven to be curcuma. But two cases of aniline coloring have been met with.

Photo-
micography
used.

The examination of mustard and of all ground spices has been largely microscopical. Photo-micography will prove of much value in showing the extent of adulteration in mustard and spices for evidence in jury trials.

Preparation
of samples.

In the microscopic examination of spices adulterated with cocoanut shells or other dense substances, the best results are obtained by the examination of the "crude fiber" or of the finely powdered material which has been bleached in hypochlorite of soda or by means of chlorine while the substance is suspended in weak solution of an alkaline carbonate.

The following samples of mustard and spices have been examined :

MUSTARD.

1897.
Aug. 4. Ground mustard sent by G. A. Rickenson, Racine. Sold by J. G. Flint, Milwaukee. Free from starch and coloring. Pure.
1898.
July 20. Bought of D. C. Adams, Milwaukee. Durkee's mustard. Manufactured by E. R. Durkee & Co., N. Y. Contains no starch or coloring matter. Pure.
Sept. 5. Dieter's mustard. Manufactured by the J. P. Dieter Co. Contains no starch or coloring. Pure.
Sept. 5. Home Brand Mustard. Manufactured by Griggs, Cooper & Co., Minneapolis. Pure.
Sept. 20. Ground mustard (bulk). Bought of B. Ehrlich, Fond du Lac. Adulterated by wheat, starch and colored with curcuma.
Sept. 20. Ground mustard (bulk). Bought of Basmussen & Miller, Oshkosh. Pure.
Sept. 20. Ground mustard (bulk). Bought of C. F. Voight, Oshkosh. Free from starch and coloring, but contains a large amount of mustard hulls.
Sept. 20. Ground mustard (bulk). Bought of K. H. Seltzer, Waukesha. Commercially pure.

- Sept. 20. Ground mustard (bulk). Bought of R. A. Watterson, Weyauwega. Contained much wheat middlings; highly colored.
- Sept. 20. Ground mustard (bulk). Bought of S. Frank. Colored with curcuma, otherwise pure.
- Sept. 29. Bulk mustard sent by C. C. Sniteman, Neillsville. Sold by Smith, Thorndyke & Co., Milwaukee, and guaranteed pure. This sample is suspected of containing mineral adulteration. Ash 5.60 per cent. Microscope showed no crystals, starch or coloring. Pure.

SPICES.

1897.
Aug. 4. Powdered ginger, sent by G. A. Rickeman, Racine. Sold by J. G. Flint & Co., Milwaukee. Pure.
1898.
July 15. Coffee sent by I. N. Coffmann, Marion. Sold by Frank VanDyke, Marion. Contains some screenings. Otherwise pure.
1897.
March 18. Coffee sent by E. P. Arpin, Grand Rapids. Rio — whole. Genuine, but contained portion of undeveloped and shrunken beans.

DRUGS.

1893.
March 10. Sent by E. B. Heimstreet, Janesville. "Favorite Hartshorn Ammonia," Bengal Mills, Chicago. Specific gravity .981, equal to 4.58 per cent. ammonia. Alkalinity equal to 4.50 per cent. ammonia. Salts of soda and potash absent.
1897.
Aug. 18. Sent by Vale & Bricton, Deerfield. Saleratus in bulk. Consists of bi-carbonate of soda, free from starch and commercially pure.
1898.
Aug. 20. Sent by E. B. Heimstreet, Janesville, Wis. "Pardoe's World-Renowned, Hand-weighed, Absolutely Pure Seidlitz Powders," Pardoe, Pindar & Co., New York.
Careful re-weighing and averaging of six each of both blue and white papers, showed the blue paper to contain but 74 per cent. and the white papers but 75 per cent. of the required amount of salts.
- March 3. Sent by E. B. Heimstreet. "Standard Aqua Ammonia," Kenwood Manufacturing Co. Contained 2.30 per cent. ammonia. Contained no soda or potash.
- April 6. C. Pfeifer, Plymouth. Tannic acid. Gave a heavy precipitate of resins and a slight precipitate of dextrin. Was quite impure but not intentionally adulterated.

PRESERVATIVES.

The use of preservatives in all kinds of food products is becoming more and more prevalent. Several brands are on the market for use in chopped meats, oysters and salted fish. Substances used in meats generally consist of sodium sulphite, where it is intended to be used in chopped meats, or of borax and boracic acid where intended for oysters or for use in brines or pickled meats.

Meat preservatives.

Sausage color. Sausage preservatives also contain aniline coloring

matter. One sample examined was found to be composed of salt niter, borax and boracic acid and magenta coloring.

Fluorids used. Ammonium acid fluoride and the fluo silicates are also sold as meat preservatives. Boracic acid and borax are advocated for use in lard and dairy products.

Fruit preservatives. Compounds containing sodium salicylate and salicylic acid are sold under trade mark names, as canning processes. One of the most prominent manufacturers of these goods has been located in a booth at the state fair for several years, and has broadly advertised his wares, using a circular stating: "Remember this is not a salicylic acid, fumigating or anti-fermentive process." Notwithstanding this, the material furnished consisted of a mixture of sodium salicylate, salicylic acid and phosphate of sodium. The party in question promptly vacated the booth upon being threatened with arrest by this department. It has been stated that many so-called rights to use this process have been sold by him and his agents to fruit growers in the state.

PRESERVATIVES.

1898.

- June 3. "Cream Albuminoid." Manufactured by Preservaline Mfg. Co., Milwaukee. Bought by N. J. Field of the Chicago Creamery Package Co. Consisted of gelatin, boracic acid and borax.
- June 3. "XXX Meat Preservative." Manufactured by Preservaline Mfg. Co., New York. Consisted of sodium sulphite.
- June 3. "Special M. Preservaline." Manufactured by Preservaline Mfg. Co. Sold by Chicago Creamery Package Co. Consisted of formic aldehyde.
- June 3. "New Method Meat Preserver." Sold by Dreyfoos & Sandels, Milwaukee. Consisted of sodium sulphite.

MISCELLANEOUS.

1898.

- Dec. 23. Canned corn ("Martha Washington" brand). Contained salicylic acid.
- Dec. 23. Canned tomatoes ("Monarch" brand). No coloring or preservative found. Pure.
- Dec. 23. "Non-intoxicating" liquors, bought by J. E. L. Smith, North Freedom. Sold by Barrett & Barrett, Chicago. Contained 3.18 per cent., by weight, alcohol.

WATERS.

A large number of waters have been submitted for examination by the State Board of Health and local health officers. The samples have been examined and reported upon as promptly as the work of this department would permit. The methods of examination are those previously used by this department, as described at length in Leffman's Manual of Sanitary Water Analyses.

Application
for lists.

The enforcement of the new food law has involved the department in tests so numerous and varying that it has been practically impossible to do work for private parties. But in all cases of suspected contamination of public or private water supplies, if samples are taken with proper precautions and are submitted by the local authorities, examinations will be made as promptly and carefully as possible. To facilitate this work suitable blanks have been prepared by Dr. U. O. B. Wingate, secretary of the State Board of Health, and application should be made to him or to the local health officers where sanitary examinations of water are desired.

State
supervision
of water
supplies.

The rapid settlement of the state makes a systematic examination of water supplies of villages and towns a growing necessity. A special appropriation has been made for that work in Massachusetts and Ohio and the location of all public water supplies and sewerage systems has been put in charge of the State Board of Health, with exceedingly gratifying results. The time will soon come when similar measures will need to be taken in this state.

WATER ANALYSES.

November 25, 1896.—Sent by Dr. H. D. Hardacker, Hortonville.

	Parts per 100,000.
Solid residue	47.00
Mineral residue	37.50
Volatile residue	9.50
Chlorine .....	.250
Saline ammonia .....	.002
Albuminoid ammonia .....	.009
Nitrites .....	.0000
Nitrates .....	.010
Considered pure.	

December 4, 1896.—Sent by Dr. W. E. Hallock, Juneau.

	Parts per 100,000.
Solid residue	65.60
Mineral residue	41.20
Volatile residue	24.40
Chlorine	6.25
N. as nitrates .....	.030
N. as nitrites .....	.0000
Ammonia, saline .....	.024
Ammonia, albuminoid .....	.004

December 4, 1896.—Sent by The Geo. Reeder Brewing Co., Wausau, Wis.

	Parts per 100,000.
Total residue	39.50
Mineral residue	20.10
Volatile residue	9.40
Chlorine	6.35
N. as nitrates .....	.770
N. as nitrites .....	.0002
Ammonia, saline .....	.024
Ammonia, albuminoid .....	.006

This water appears to be quite badly contaminated.

December 17, 1896.—Sent by C. Larson, Lake Geneva.

Water No. 1.

	Parts per 100,000.
Solid residue	22.50
Mineral residue	13.30
Volatile residue	9.20
Chlorine .....	.575
Nitrogen as nitrites .....	.0003
Nitrogen as nitrates .....	.030
Saline ammonia .....	.028
Albuminoid ammonia .....	.010

Water of doubtful purity.

Water No. 2.

Solid residue	30.10
Mineral residue	19.70
Volatile residue	10.40
Chlorine .....	.225
Nitrogen as nitrites .....	.0000
Nitrogen as nitrates .....	.008
Saline ammonia .....	.002
Albuminoid ammonia .....	.003

Considered pure.

Report of the Wisconsin

December 23, 1896.—Sent by Dr. O. E. Bailey, Waterloo.

Water No. 1.

	Parts per 100,000.
Solid residue	262.40
Mineral residue	151.00
Volatile residue	111.4
(Nitrous fumes were given off upon ignition.)	
Chlorine	46.450
Nitrogen as nitrates.....	very large amount.
Nitrogen as nitrites.....	trace only.
Ammonia, saline .....	.004
Ammonia, albuminoid .....	.016

Mineral impurities very large amount, organic comparatively small.

Water No. 2.

Solid residue	119.50
Mineral residue	72.00
Volatile residue	47.50
Chlorine	22.50
Nitrogen as nitrates	large amount.
Nitrogen as nitrites .....	.0002
Ammonia, saline .....	.001
Ammonia, albuminoid .....	.003

This water is similar to the other, only polluted to a much less degree.

January 22, 1897.—Sent by Dr. F. L. Hinman, Rhinelander.

	Parts per 100,000.
Chlorine .....	.175
Nitrates .....	.012
Nitrites .....	.0000
Free ammonia .....	.006
Albuminoid ammonia .....	.020
Color	2 degrees

Free from sewage pollution.

February 12, 1897.—Water sample sent by Dr. Hartwig, Watertown.

	Parts per 100,000.
Chlorine	1.950
Saline ammonia .....	.001
Albuminoid ammonia .....	.006
N. as nitrites .....	.0000
N. as nitrates .....	.008

February 19, 1897.—Sent by F. O. Hunt, Fall River.

Water No. 1, Marked "Hobart's."

	Parts per 100,000.
Solid residue	34.40
Mineral residue	20.90
Volatile residue	3.50
Chlorine	1.150
Nitrogen as nitrites .....	.0000
Nitrogen as nitrates .....	.350
Ammonia, saline	trace only.
Ammonia, albuminoid .....	.002

Contains little organic matter, but shows soil leaching.

Water No. 2, "Councilman's."

	Parts per 100,000.
Solid residue	116.10
Mineral residue	56.10
Volatile residue	60.0
Chlorine .....	.175
Nitrogen as nitrites .....	.0001
Nitrogen as nitrates	1.585
Ammonia, saline .....	.001
Ammonia, albuminoid .....	.005

February 24, 1897.—Sent by Dr. Chas. McDonald, Kewaunee.

	Parts per 100,000.
Solid residue	28.5
Mineral residue	19.8
Volatile residue	8.7
Chlorine	1.500
Nitrogen as nitrites .....	.0002
Nitrogen at nitrates .....	.020
Ammonia, saline .....	.068
Ammonia, albuminoid .....	.022

Condemned.

March 19, 1897.—Sent by W. E. Ground, West Superior.

	Parts per 100,000.
Solid residue	6.600
Mineral residue	3.400
Volatile residue	3.200
Chlorine .....	.140
Saline ammonia .....	.005
Albuminoid ammonia .....	.011
Nitrogen as nitrates .....	.025
Nitrogen as nitrites .....	.0001

April 30, 1897.—Sent by D. G. Morris, president village board, Sharon, Wis.

	Parts per 100,000.
Total residue	31.90
Mineral residue	24.50
Volatile residue	7.40
Chlorine .....	.300
Nitrogen as nitrites .....	.0004
Nitrogen as nitrates .....	.035
Ammonia, saline .....	.012
Ammonia, albuminoid .....	.004

May 6, 1897.—Sent by F. E. Walte, Oshkosh.

	Parts per 100,000.
Solid residue	29.00
Mineral residue	21.90
Chlorine .....	.250
Nitrogen as nitrates .....	.005
Nitrogen as nitrites .....	.0000
Ammonia, saline .....	.012
Ammonia, albuminoid .....	.002

Unusually pure.

Report of the Wisconsin

May 20, 1897.—Sent by E. M. Wright, Prairie du Chien.

Well Water.

	Parts per 100,000.
Total residue	29.90
Mineral residue	13.70
Volatile residue	16.20
Chlorine	1.575
Free ammonia .....	.006
Albuminoid ammonia .....	.005
N. as nitrites .....	.0000
N. as nitrates	1.700

Contained much "past pollution," and is of doubtful purity.

May 20, 1897.—Sent by Hon. E. I. Kidd, Prairie du Chien.

Parts per 100,000.

Total residue	37.00
Mineral residue	24.80
Volatile residue	12.20
Chlorine	1.050
Ammonia, saline .....	.001
Ammonia, albuminoid .....	.003
Nitrogen as nitrites .....	.0000
Nitrogen as nitrates .....	.450

"Past pollution," doubtful purity.

May 28, 1897.—Sent by W. W. Chadwick, Monroe City Well.

Parts per 100,000.

Total residue	39.10
Mineral residue	27.30
Volatile residue	11.80
Chlorine	1.125
Nitrogen as nitrites .....	.0000
Nitrogen as nitrates .....	.290
Ammonia, saline .....	.000
Ammonia, albuminoid .....	.002

May 28, 1897.—Sent by Hon. E. I. Kidd, Prairie du Chien Well.

Parts per 100,000.

Total residue	37.60
Mineral residue	18.60
Volatile residue	19.00
Chlorine	1.700
Nitrogen as nitrites .....	.0001
Nitrogen as nitrates	1.571
Saline ammonia .....	.000
Albuminoid ammonia .....	.004

Past pollution, dangerous.

May 25, 1897.—Sent by Dr. J. C. Reynolds, Lake Geneva.

Water No. 1.

	Parts per 100,000.
Total residue	23.90
Mineral residue	11.10
Volatile residue	12.80
Chlorine .....	.150
Nitrogen as nitrites .....	.0000
Nitrogen as nitrates .....	.005
Saline ammonia .....	.014
Albuminoid ammonia .....	.048

Free from sewage; contains vegetable impurities.

Water No. 2.

	Parts per 100,000.
Total residue	23.00
Mineral residue	11.30
Volatile residue	11.70
Chlorine .....	.175
Nitrogen as nitrites .....	.0000
Nitrogen as nitrates	traces only.
Saline ammonia .....	.008
Albuminoid ammonia .....	.034

Water No. 3.

	Parts per 100,000.
Total residue	1.60
Mineral residue (about 1-20 grain to gallon) .....	.10
Volatile residue	1.50
Chlorine	traces only.
Nitrogen as nitrites .....	.0000
Nitrogen as nitrates	Less than .005
Saline ammonia .....	.001
Albuminoid ammonia .....	.014

(Seems to be ice water.)

June 9, 1897.—Sent by Dr. B. F. Dobson, Berlin.
Sample of artesian water from the city supply.

	Parts per 100,000.
Total residue	38.60
Mineral residue	29.30
Volatile residue	9.30
Chlorine .....	.700
Sulphuric anhydride	3.021
Equivalent calcium sulphate	5.136
Nitrogen as nitrites .....	.0000
Nitrogen as nitrates .....	.006
Ammonia, saline .....	.001
Ammonia, albuminoid	traces only.

Exceedingly pure.

Report of the Wisconsin

June 16, 1897.—Sent by A. M. Kersten, M. D., De Pere.

Ice Sample "A" from above Dam.

	Parts per 100,000.
Chlorine	trace only.
Nitrites .....	.0000
Nitrates .....	.0000
Ammonia, saline .....	.006
Ammonia, albuminoid .....	.009

Reasonably pure.

Ice Sample "B" from below the Dam.

	Parts per 100,000.
Chlorine	less than .050
Nitrites .....	.0000
Nitrates .....	.0000
Ammonia, saline .....	.008
Ammonia, albuminoid .....	.024

Not so pure as "A."

June 25, 1897.—Sent by A. F. Bloki, Health Officer, Sheboygan.

	Parts per 100,000.
Total residue	39.30
Mineral residue	31.40
Volatile residue	7.90
Chlorine .....	.850 (quite high)
Nitrates .....	.005
Nitrites .....	.0000
Ammonia, saline .....	.012
Ammonia, albuminoid .....	.082

Condemned.

July 2, 1897.—Sent by Dr. J. C. Reynolds, Lake Geneva.

Water No. 3.

	Parts per 100,000.
Total residue	21.20
Mineral residue	11.40
Volatile residue	9.80
Chlorine .....	.225
Nitrogen as nitrates .....	.007
Nitrogen as nitrites .....	.0000
Ammonia, saline	none.
Ammonia, albuminoid .....	.022

Vegetable impurities.

July 15, 1897.—Water sample sent from Children's Fresh Air Home, Neshota.

	Parts per 100,000.
Total residue	36.10
Mineral residue	27.20
Volatile residue	8.90
Chlorine .....	.300
Nitrogen as nitrites .....	.0002
Nitrogen as nitrates .....	.010
Ammonia, saline .....	.038
Ammonia, albuminoid .....	.016

Impure from vegetable matter.

July 16, 1897.—Sent by E. I. Kidd, Prairie du Chien.

Sample No. 1, from Well of L. Case.

	Parts per 100,000.
Total residue	41.20
Mineral residue	26.60
Volatile residue	14.60
Chlorine	1.350
Nitrogen as nitrites .....	.0000
Nitrogen as nitrates	1.250
Ammonia, albuminoid .....	.004
Ammonia, saline .....	.002

Suspicious.

Sample No. 2.

	Parts per 100,000.
Total residue	39.40
Mineral residue	22.20
Volatile residue	17.20
Chlorine .....	.600
Nitrogen as nitrites	traces.
Nitrogen as nitrates .....	.220
Ammonia, saline .....	.002
Ammonia, albuminoid .....	.008

Suspicious.

July 22, 1897.—Water from well at school district No. 7, Beaver Dam. Sent by Dr. Geo. E. Talbert.

	Parts per 100,000.
Total residue	60.60
Mineral residue	51.10
Volatile residue	9.50
Chlorine .....	.175
Nitrogen as nitrites .....	.0000
Nitrogen as nitrates .....	.015
Ammonia, saline .....	.002
Ammonia, albuminoid .....	.014

This water contains no sewage pollution or contamination of a dangerous character. It contains some organic matter, however, probably of vegetable origin.

August 20, 1897.—Sent by L. T. Pare, Health Officer, Chippewa Falls. Taken from taps of city supply, August 11, 3 p. m.

Water No. 1.

	Parts per 100,000.
Total residue	10.90
Mineral residue	6.80
Volatile residue	4.10
Chlorine .....	.160
Nitrogen as nitrites .....	.0000
Nitrogen as nitrates .....	.110
Ammonia, saline .....	.000
Ammonia, albuminoid .....	.002
Q consumed in 10 minutes .....	.015

Report of the Wisconsin

Water No. 2.

	Parts per 100,000.
Total residue	10.80
Mineral residue	6.90
Volatile residue	3.90
Chlorine .....	.160
Nitrogen as nitrites .....	.0004
Nitrogen as nitrates .....	.120
Ammonia, saline .....	.002
Ammonia, albuminoid .....	.003
O consumed in ten minutes .....	.020

These waters are of exceptional purity.

September 17, 1897.—Sent by A. Cowell, Hartland.

	Parts per 100,000.
Chlorine	1.600
Ammonia, saline .....	.004
Ammonia, albuminoid .....	.008
Nitrogen as nitrites .....	.0001

Nitrates are unusually heavy.
Condemned.

October 7, 1897.—Sent by Dr. A. B. Rosenberry, Arbor Vitae.

	Parts per 100,000.
Total residue	9.10
Mineral residue	5.80
Volatile residue	3.30
Chlorine .....	.450
Nitrogen as nitrites .....	.0000
Nitrogen as nitrates .....	.080
Ammonia, saline .....	.000
Ammonia, albuminoid .....	.003

Pure soft water.

October 21, 1897.—Sent by Dr. B. F. Dodson, Berlin. Taken from well of H. S. Sackett.

	Parts per 100,000.
Total solids	36.10
Mineral residue	19.70
Volatile residue	16.40
Chlorine	2.350
Nitrogen as nitrites .....	.0001
Nitrogen as nitrates .....	.055
Ammonia, saline .....	.002
Ammonia, albuminoid .....	.008

November 3, 1897.—Sent by Dr. Gillan, Oshkosh.

	Parts per 100,000.
Total residue	31.30
Mineral residue	23.80
Volatile residue	7.50
Chlorine .....	.425
Ammonia, saline .....	.008
Ammonia, albuminoid .....	.003
Nitrogen as nitrites .....	.0000
Nitrogen as nitrates .....	.008

Considered pure.

November 5, 1897.—Sent by Dr. Chas. O. Cron, Health Officer, Camp Douglas.
 Parts per 100,000.

Total residue	34.80
Mineral residue	20.60
Volatile residue	14.20
Chlorine	2.250
Nitrogen as nitrites .....	.0030
Nitrogen as nitrates .....	.550
Ammonia, saline .....	.088
Ammonia, albuminoid .....	.050

Badly contaminated.

November 18, 1897.—Sent by Health Officer, Superior. (Sent in corked bottle.)
 Parts per 100,000.

Total residue	6.40
Mineral residue	4.00
Volatile residue	2.40
Chlorine .....	.160
Nitrogen as nitrites .....	.0000
Nitrogen as nitrates	(doubt) .008
Ammonia, saline .....	.001
Ammonia, albuminoid .....	.007

November 30, 1897.—Elroy city water. Sent by Dr. C. S. Smith, Elroy.
 Parts per 100,000.

Total residue	20.70
Mineral residue	14.50
Volatile residue	6.20
Chlorine .....	.850
Ammonia, saline .....	.000
Ammonia, albuminoid .....	.003
Nitrogen as nitrites .....	.0000
Nitrogen as nitrates .....	.040

Pure.

November 30, 1897.—Sent by W. C. Schmitz, St. Nazianz, Wis.
 Water No. 1, from Well.

Total residue	63.30
Mineral residue	35.40
Volatile residue	27.90
Chlorine	4.650
Saline ammonia	none.
Albuminoid ammonia .....	.008
Nitrogen as nitrites	none.
Nitrogen as nitrates .....	.300

Deemed unsafe.

December 1, 1897.—Sent by H. W. Morganroth, M. D., Kewaskum.
 Parts per 100,000.

Total residue	36.90
Mineral residue	28.70
Volatile residue	8.20
Chlorine	1.050
Ammonia, saline .....	.000
Ammonia, albuminoid .....	.004
Nitrogen as nitrites .....	.0000
Nitrogen as nitrates .....	.010

Report of the Wisconsin

December 1st, 1897.—C. E. Thayer, M. D., Markesan.
Water sample eight ounces only.

	Parts per 100,000.
Chlorine	2.50
Nitrites	none.
Nitrates .....	.035

Passed as probably pure.

January 12, 1898.—Sent by Dr. W. H. Budge, Marshfield.

	Parts per 100,000.
Total residue	40.30
Mineral residue	26.00
Volatile residue	13.70
Chlorine	9.40
Saline ammonia .....	.012
Albuminoid ammonia .....	.014
Nitrates	large amount.
Nitrites	trace only.

Impure.

January 13, 1898.—Sent by R. A. Girardin, Health Officer, Oconto Falls, school well No. 3.

	Parts per 100,000.
Total residue	25.80
Mineral residue	17.70
Volatile residue	8.10
Chlorine .....	.200
Saline ammonia .....	.000
Albuminoid ammonia .....	.004
Nitrates	traces.
Nitrites	none.

Pure.

Sent by Wm. Hipke from well in cheese factory at Hustisford, January 13.

	Parts per 100,000.
Total residue	86.00
Mineral residue	55.50
Volatile residue	30.50
Chlorine	21.400
Saline ammonia .....	.008
Albuminoid ammonia .....	.006
Nitrates	less than .010
Nitrites	none.

January 19, 1898.—Sent by Dr. A. B. Rosenberry, Health Officer, from Arbor Vitae, Vilas county.

	Parts per 100,000.
Total residue	34.20
Mineral residue	20.30
Volatile residue	13.90
Chlorine	3.500
Saline ammonia .....	.147
Albuminoid ammonia .....	.114
Nitrogen at nitrites	trace.
Nitrogen as nitrates	large amount.

Condemned.

January 20, 1898.—Well water sent by D. F. Bentley, M. D., Health Officer, Portage.

	Parts per 100,000.
Total residue	72.90
Mineral residue	54.30
Volatile residue	18.60
Chlorine	6.400
Saline ammonia .....	.006
Albuminoid ammonia .....	.042
Nitrogen as nitrates	very large amount.
Nitrogen as nitrites .....	.0010

The residue blackens considerably on ignition.
 Condemned.

January 20, 1898.—Water from tank of city water supply of Waupun. Sent by Dr. G. B. Durand.

	Parts per 100,000.
Solid residue	36.80
Mineral residue	27.80
Volatile residue	9.00
Chlorine	0.625
Ammonia saline	0.024
Ammonia albuminoid	0.002
Nitrogen as nitrites	0.0001
Nitrogen as nitrates	0.055

January 22, 1898.—Pumping station, Lake Geneva.

Water No. 1.

	Parts per 100,000.
Chlorine .....	.575
Free ammonia (saline) .....	.026
Albuminoid ammonia .....	.008
Nitrogen as nitrites .....	.0001
Nitrogen as nitrates .....	.055

Water No. 2.

	Parts per 100,000.
Chlorine .....	.225
Free ammonia (saline) .....	.016
Albuminoid ammonia .....	.018
Nitrogen as nitrites .....	.0000
Nitrogen as nitrates .....	.005

May 18, 1898.—Sent by F. D. Bentley, M. D., Portage.

	Parts per 100,000.
Total residue	149.50
Mineral residue	119.10
Volatile residue	30.40
Chlorine	14.150
Saline ammonia .....	.013
Albuminoid ammonia .....	.044
Nitrogen as nitrites .....	.0010
Nitrogen as nitrates	very large amount.

Condemned.

Report of the Wisconsin

July 29, 1898.—Water from the Wausau city water works. Sent by Dr. L. E. Spencer, H. O.

Water No. 1.

	Parts per 100,000.
Total residue	10.10
Mineral residue	4.40
Volatile residue	5.70
Chlorine .....	.156
Nitrogen as nitrites .....	.0000
Nitrogen as nitrates .....	.020
Saline ammonia .....	.003
Albuminoid ammonia .....	.013

Water No. 2.

	Parts per 100,000.
Total residue	9.20
Mineral residue	4.50
Volatile residue	4.70
Chlorine .....	.150
Nitrogen as nitrites .....	.0000
Nitrogen as nitrates .....	.020
Saline ammonia .....	.006
Albuminoid ammonia .....	.011

August 5, 1898.—Sent by Dr. G. L. Buland, Greenwood, Wis.

	Parts per 100,000.
Total residue	5.80
Mineral residue	2.80
Volatile residue	3.00
Chlorine .....	.140
Nitrogen as nitrites .....	.0000
Nitrogen as nitrates .....	.040
Saline ammonia	trace only.
Albuminoid ammonia .....	.001
Exceedingly pure.	

FACTORY AND CITY MILK TESTS.

<i>Blanchardville.</i>		<i>Per cent. fat.</i>	
H. Hendrickson	4.2	Frank Krescine	4.8
C. Devoe	4.4	Frank Krescine	4.6
Peter Rood	4.5	F. Schleiwe	3.8
Hiram Horner	4.4	F. Schleiwe	4.3
Ole Moe	4.4	C. Eiferd	4.2
M. Corbin	4.1		
Dan Kinze	4.0	<i>Watertown.</i>	
Jos. Bernat	4.3	E. O'Connors	4.6
John Kinze	4.1	E. O'Connors	4.1
Levi Pátridge	4.4	W. Triplit	3.8
Ed. Daley	4.2	W. Triplit	3.9
Jos. Gavigan	4.1	John Buckley	4.8
		E. Rodelaf	4.1
		John Ryan	4.4
		John Ryan	4.4
		John Doarcy	4.7
		E. Neillite	4.6
		C. Rusch	4.4
		M. Manning	4.4
		<i>Blanchardville.</i>	
		Wm. Flint	4.6
		D. McGrath	4.2
		D. McGrath	4.7
		D. McGrath	4.0
		John Penniston	4.3
		Nels Nelson	4.3
		A. Flint	4.2
		Theo. Vinger	3.8
		Theo. Vinger	4.4
		John Wyss	4.0
		John Wyss	3.8
		Geo. Flint	4.0
		Gustav Vinger	4.2
		Gustav Vinger	4.0
		<i>Hollandale.</i>	
		Mrs. M. Gaylord	4.4
		Mrs. M. Gaylord	3.6
		Sever Disrud	4.4
		Thos. Hendrickson	3.9
		Ben Holland	4.0
		K. Edmond	4.5

<i>Burnett.</i>	
August Luck	3.8
Herman Luck	4.5
Otto Koch	4.2
August Schultz	4.1
Peter Young	4.0
Wm. Luck	3.4
Carl Pautsch	3.8
Carl Pautsch	3.8
Wm. Pautsch	4.2
Wm. Pautsch	4.4
M. Donovan	3.0
M. Donovan	3.3
Herman Gruetzmacher	3.8
John Gras	4.3

<i>Silver Creek.</i>	
Mrs. Eugene Sweeny	4.7
Mrs. Eugene Sweeny	4.4
A. Kanndt	3.4
A. Frederick	3.9
F. Lange	4.2
F. Lange	4.3
Wm. Kresensky	4.4
Wm. Kresensky	4.2
A. Schlaue	5.0
F. Janke	4.8
Fred Kuehl	4.9
Fred Kuehl	5.0
Chas. Hoft	4.0

	Per ct. of fat.		Per ct. of fat.
John Weiss	4.4	Peter Larson	4.1
Joshua Robison	4.0	Abe Johnson	4.0
E. Leonard	4.0	H. D. Rodgers	3.8
E. Leonard	4.6		
<i>Mill Creek.</i>		<i>Orfordville.</i>	
Robt. Owens	4.1	Geo. Bernath	5.6
John Davis	4.1		
Mite Bros.	4.8	<i>Yankee Hollow Factory.</i>	
Mite Bros.	4.3	John Kain	3.8
John Williams	4.8		
O. Roberts	4.3	<i>Brighton.</i>	
Elisha Dodge	4.5	Ferd. Seitz	2.60
Wm. Randall	4.2		
Wm. Randall	4.1	<i>Arena.</i>	
J. Murray	3.8	J. Roethlisberger	4.45
Frank Stapleson	4.8		
Wm. Ruggles	3.8	<i>Richfield.</i>	
Peter Murphy	4.5	Carl Hilt	4.0
John Jager	6.9	Wm. Weller	4.2
<i>Blanchardville.</i>		Henry Laudenhimer... below standard.	
		Henry Laudenhimer	4.4
(Sent by Bosshardt.)		Geo. Sauer	4.7
Mrs. Wang	4.8	Conrad Schadt	4.1
A. Emberson	4.5	Conrad Schadt	4.9
E. Logeson	4.3	D. Abling	4.4
R. E. Blake	4.2	E. Conrad	4.6
Wm. Blanchard	4.1	Wm. Greesman	3.8
A. Anderson	4.4	Wm. Greesman	4.3
Ole Oien	4.8	Geo. Conrad	4.2
<i>Crystal Spring.</i>		Mrs. Mary Dickel	4.4
John Closkin	5.2	Peter Miller	4.0
R. Yapp	3.8	Peter Miller	4.0
D. Doyle	4.5	J. Elmerman	3.9
John Morris	5.3	A. Shank	3.9
H. Jones	4.5	J. Schuster	4.2
Mrs. Jas. Doyle	4.2	J. Schuster	3.8
Wm. Thomas	4.1	Chris. Staser	4.3
H. Bomberly	4.8	Wm. Wolf	4.9
Robt. Creigner	4.2	H. Thoma	4.5
Lawrence Jones	4.8	H. Baumgardner	4.3
H. Bomberly	4.8	A. Nab	3.7
F. Buesler	3.9	Peter Conrad	4.5
David Morris	4.4	Fred Patchin	3.8
<i>Blanchardville.</i>		<i>Oak Grove.</i>	
		Theo. Omstedt	4.2
(Rogers' Factory.)		C. Mekeburg	3.8
Mrs. M. Cavanaugh	4.7	John Flasch	4.4
John O. Johnson	4.1	Frank Ohmstedt	4.6
Chas. Jacobs	4.7	Albert Zimmerman	4.3
John Johnson	4.6	Herman Tesch	5.8
Louis Larson	4.4	A. Horn	4.7
Ole Paulson	4.4	Aug. Zimmerman	4.2

	Per cent. of fat.
Aug. Neis	4.8
Aug. Wegner	4.6
A. Sunnicht	4.4
Aug. Sell	4.4
Wm. Weinheimer	4.8
John Schraven	3.9

Manitowoc.

Mrs. Peck	3.6
F. Lipke	4.0
Mrs. Schumacher	2.9
Mary Pieder	4.3
Mrs. Schumacher	3.3
F. Lipke	3.9
T. J. McCarty	3.9
T. J. McCarty	3.6
A. H. Heise	3.8
A. H. Heise	3.0
John Jaar	4.1
John Jaar	4.1
T. J. McCarty	4.1
S. Herzog	4.2
J. E. Harris	4.1
J. E. Harris	4.1

Elkhorn.

Frank Finley	4.2
W. Dunbar	4.5
Wm. Dunbar	4.6
David Crabtree	4.2
H. Parks	4.8
H. McKay	4.2
A. D. Stanford	4.4
F. Baker	4.0
C. F. Flanders	5.6
E. H. Morgan	4.8
John Roach	4.1
J. H. Strong	3.7
Wales & Goodrich	4.0
C. S. Mills	4.4
Wm. Umness	3.8
A. Murphy	3.8
John Slattery	3.8
D. Harrington	4.2
Wm. Morrisey	5.4
I. Morehouse	3.5
C. Wilke	5.0
Pat. Morrisey	3.6
Jos. Welsh	6.2
P. Purdy	3.6
John Finley	4.6
Extra bottle from	
B. B. Taylor's herd	4.0
Frank Brooks	4.3
Ben Skiff	4.4
Arthur Wales	3.0

	Per cent. of fat.
Spurbeck & White	4.2
H. Jackson	4.2
Charlie Waterberry	4.0
J. W. Bahey	4.7
Baker Bros.	4.6
Ed. Ames	4.2
E. Welsh	4.2
J. S. Blodgett	4.9
E. Hand	3.2
R. Mills	4.4
Millard Mills	4.2
Frank Babcock	3.0
J. Young	4.2
Thos. Howard	4.3
C. Boyce	3.4
Robt. Lee	4.0
Robt. Whery	3.0
Frank Kinney	4.0
H. August	4.4
Rockwell Bros.	3.8
Thos. Keefe	4.3
J. A. Shepherd	4.3

Spring Prairie.

J. H. Zigg	3.8
P. W. Houghton	4.3
O. Pratt	3.7
O. Vaughn	4.4
Haslow & Co.	4.3
Mark Foot	5.2
E. Merrick	3.5
Ed. Weiners	4.2
Frank Humbert	4.2
Belle & Co.	3.8
Tom Decoudres	4.2
L. Humbert	3.5
George Vaughn	3.9
George Camer	4.0
Nick Camer	3.8
Will Paulsen	4.1
J. Briery	4.4
A. Paulsen	4.4
O. H. Phelps	4.1
Wm. Mitchell	4.2
Wm. Blount	4.6
H. Vaughn	3.8
George Fratt	3.6
Merrick & Co.	3.4
A. S. Wortman	4.1
W. I. Loomis	4.1
Tom Watson	3.2
Paulsen, Sr.	4.3
Mayhew & Co.	4.0
Jule Scheide	3.6
Wm. Falk	4.2
Forge & Son	4.1
Fred Zabler	3.0

	Per cent. of fat.
H. Baling	3.5
T. Fonda	4.1
Fred Frank	4.5
Harry Griswold	4.4
C. L. Tuttle	4.0
J. Kelley	3.8
Ed. Merriman	4.1
Skim milk, No. 1.....	0.1
Skim milk, No. 2.....	0.05
Buttermilk	0.1
H. W. Christman.....	4.0

Deerfield.

Mrs. O. Borgerud.....	4.2
H. Bjoen	3.8
H. Huges	3.8
E. Bjoen	3.9
H. A. Bjoen	3.8
K. Odden	4.0
P. Nordle	4.6
T. Kingland	4.8
A. Swan	4.6
B. Berge	4.3
A. Lee	4.8
Johnson Company	4.4
O. Houghton	4.1
E. Golleckson	4.0
T. Smithback	3.8
C. Hanson	4.8
P. Longhill	3.8
Roplan Bros.	4.0
G. Bosben	4.0
E. Johnson	4.6
H. Howe	3.6
J. Lenaas	3.8
P. Paulson	4.0
N. G. Nelson	5.0
H. Rothe	3.8
A. N. Lee	4.0
N. Williams	3.8
M. Berge	4.1
Ole Tetillone	3.6
L. Tellong	3.6
T. Larson	4.1
N. Soberg	3.5
J. Lee	3.8
M. Erdal	4.6
Mrs. A. Koste	4.2
Ole Flom	4.4
Ole Havey	4.2
Skim milk	0.1
Skim milk	0.05

Stoughton.

Charles Hildreth	3.7
J. W. Hunt	3.7
Sam Hogan	4.2

	Per cent. of fat.
L. E. Hildreth	watered.
James Carrison	3.7
Sorem Peterson	4.4
B. Johnson	3.5
W. Larmer	4.1
A. Asterhiem	4.0
E. Amundson	4.1
S. Stockton	4.2
Ole Otterson	4.0
W. R. Galley	4.6
William Careson	4.0
E. A. Wright	4.4
S. Asterhiem	4.2
J. Larum	3.4
E. Gilbertson	4.0
Hans Peterson	3.7
W. H. Leary	4.2
Sam Miles	3.0
Utter & Gilbertson	4.2
Mrs. N. C. Lee	4.2
H. H. Emery	5.0
Ole Beadle	4.1
Bossingham & Ourud	4.2
W. Bossingham	5.0
W. J. Bossingham	4.2
J. Richardson	5.0
T. Jehn	5.0
Chris Hanson	3.6
John Strain	3.3
H. Hanson	3.6
C. Hanan	4.2
G. Hanan	3.4
Morrison Bros.	3.6
A. Thorson	4.3
S. O. Swim	4.2
O. Paulson	3.6
H. Bowin	4.7
G. Jehm	4.0
R. Larson	3.6
G. Huber	3.4
S. L. Graves	4.0
C. Nelson	3.6
F. Guinup	4.0
C. A. Peterson	4.0

Auroraville.

O. Austract	3.7
Thos. Jones	3.4
C. A. Davenport	3.6
Jasin Shead	3.4
N. W. Herrington	3.7
Chas. Bower	4.1
D. W. Cate	3.6
John Rodencil	3.4
H. Blaze	3.8
Jos. Seaman	4.0
E. Rodencil	3.4
Chas. Bradley	4.4

Report of the Wisconsin

	Per cent. of fat.		Per cent. of fat.
P. Dobbins	3.4	C. Rasch	3.6
F. Williams	3.7	N. Hahn	4.1
E. G. Walker	3.5	John Swenson	3.8
Mrs. A. F. Clark	3.9	A. McCafferty	4.0
F. D. Mitchel	3.6	G. Koppish	3.7
Will Hall	4.2	John Memler	3.5
E. M. Jones	4.0	Wm. Davis & Son.....	3.7
Rob. Mitchel	4.0		
B. T. Davenport	3.6		

Appleton.

John Carey	3.4
John Carey	3.7
Silas Kolmer	3.2
C. Rohl, mixed	3.3
Geo. Schroeder, mixed	4.0
O. Carey	3.9
O. Carey	3.3
J. Meltz	3.0
Pasteurized milk	3.6

Sent by L. E. Hildreth, Stoughton.

	a. m.	p. m.
1.	3.3	3.6
2.	2.8	3.0
3.	3.0	3.0
4.	2.4	3.8
5.	3.0	3.2
6.	3.2	3.2
7.	2.75	3.3
8.	3.6	4.0
9.	3.5	3.8
10.	3.2	2.8
11.	3.7	3.8
12.	2.9	3.0
13.	3.1	3.3

Wilmot.

F. Hasselman	4.8
O. Liedtke	3.0
W. Schmidt	3.7
John Kenis	3.9
F. Pagel	4.3
John Hasselman	bottle broken.
Charlie Fronk	3.8
John Gauger	4.4
Mrs. C. Gauger	4.4
Chas. Dowel	3.8
M. Koppish	3.6
D. F. Vincent	3.5
Frank Scott	3.8
Wm. Albrecht	3.8
H. Brinkham	4.0
A. Scherf	4.4
Wm. Folbrecht	3.7
J. R. Hyde	4.0

Wilmot.

D. Vincent	3.3
J. R. Hyde	3.6
William Schmidt	3.2
C. Frank	3.8
N. Hahn	3.9
John Memler	4.05
A. Scherf	4.75
A. McDougal	3.6
C. Rasch	3.8
William Albrecht	3.8
William Brenckman	3.6
A. McCafferty	4.15
J. Swinson	4.0
A. Liedtke	3.6
F. Hasselman	3.5
John Kenis	4.1
C. Dowell	3.9
William Davis & Son.....	3.2
G. Coppish	3.8
John Gauger	4.2
F. Scott	3.6
John Hasselman	3.4
M. Dugan	3.2
William Schultz	3.6
Fred Pagel	3.6
William Folbright	3.8
M. Coppish	3.4

Amos.

Martha Lindy	3.5
E. J. Nasset	4.0
L. C. Kravick	3.4
Jens Peterson	3.7
S. E. Anderson	4.2
J. J. Nasset	3.6
I. J. Nasset	4.2
Paul Jensen	4.4
S. P. Saunders	4.0
Walt Wicken	3.6
L. Marsden	4.2
Sam Marsden	4.2
Ben Cooper	4.2
Sam. Hall	3.8
A. P. Grandall	4.4
Peter Paulsen	3.7
C. Nelson	4.1

	Per ct. of fat.	
H. Krantz	3.3	
H. Clarke	3.4	
H. Clarke	3.1	
Wm. Harris	3.0	
Wm. Harris	3.8	
Chas. Hunt	3.5	
Chas. Hunt	3.4	
T. J. Oakley	3.6	
T. J. Oakley	3.2	
Geo. Bacon	3.0	
Geo. Bacon	4.2	
Geo. Church	3.6	
C. Palmer	4.1	
F. Westrick	3.8	

Seven Oaks Dairy.

No. of cow.	a. m.	p. m.
10	1.9	4.3
25	3.6	...
8	3.4	3.8
19	3.2	...
18	2.9	3.8
3	3.1	...
20	2.8	4.0
4	3.2	4.1
5	2.4	...
7	3.5	...
16	3.3	4.9
11	3.8	...
12	3.2	3.8
15	2.8	...
1	3.1	...
28	2.1	...
23	3.2	...
24	3.3	4.2
6	4.2	5.4
2	4.	...
21	3.4	...
14	3.2	3.8
22	3.8	4.4
13	3.5	...
17	2.5	...
27	2.7	...
29	2.2	...
31	3.8	...
40	3.8	...
26	3.4	4.1

Monroe.

P. Dolan	3.4
P. Dolan	4.0
F. Benkert (2 cans)	3.6
C. Goddard	3.6
Geo. Garwell	3.4
Geo. Garwell	4.2
S. Jackson	3.5
S. Jackson	4.2
R. Kubli	3.6

	Per ct. of fat.
R. Kubli	3.8
J. Thomas	3.3
J. Thomas	4.0
Nelson Rust	below standard.
Nelson Rust	4.2
G. Lenharr	3.5
G. Lenharr	4.4
Wm. Wood	3.8
Wm. Wood	3.9
J. Klassy	3.8
J. Klassy	3.8
J. Klassy	3.5
J. Klassy	4.3
A. J. Kean	3.3
A. J. Kean	4.2
Mrs. K. Alleman	3.6
Mrs. K. Alleman	3.6
Henry Brown	3.4
Henry Brown	4.3
H. Baebler	4.0
H. Baebler	4.1
G. Nafzger	3.2
G. Nafzger	4.3
O'Connor Bros.	3.4
O'Connor Bros.	3.7
F. Kremer	3.6
G. Griffith	3.2
G. Griffith	3.9
J. Elmer	3.6
J. Elmer	3.8
H. Elmer	3.0
H. Elmer	4.4
J. Dougherty	3.9
J. Dougherty	4.9
C. Griffith	3.8
C. Griffith	4.2
A. L. Berryman	4.0
I. Regez	4.0
J. Regez	3.9
J. Regez, (mixed)	5.2

Watertown.

Herman Graining	3.6
Herman Graining	5.0
Wm. Graining	3.8
Wm. Bishoff	3.8
Jos. Holstein	3.6
Wm. Eickstadt, (mixed)	3.9
Wm. Eickstadt, (mixed)	3.4
Wm. Eickstadt, (mixed)	3.8
Aug. Thoma	3.8
Peter Thauer	3.9
Peter Thauer	3.2
Peter Thauer	4.6
John Neis	3.8
Geo. Meyer	3.8
John Sullivan	3.4
John Sullivan	5.2

Per ct. of fat.

J. W. West	3.0
F. Buehler	4.2
F. Leopold	4.1
Carl Schreiber	4.0
L. Williams	3.8
John Hasse	4.4
John Hasse	4.0
Fred Dieckhoff	4.0

Monroe.

George Kelley	3.9
John Martin	3.7
Peter Reger	below standard.
Wm. Tonkin	below standard.
Wm. Tonkin	3.0
Steve Tonkin	3.4
Wm. Jewell, Sr.	3.5
Wm. Jewell, Jr.	3.3
Jos. Bennett	3.2
Frank Vivian	3.8
Will Vivian	3.6
John Vivian	3.6
John Vivian	3.4

Linden Factory.

Albert Hellery	3.9
Charley Tremain	3.6
C. Goldman	3.6
John Brewer	3.9
Wm. Batten	4.0
C. Dolphin	3.8
Henry Reynolds	4.4
Wm. Tremain	4.6
J. Bailey	3.8
Wm. Buckett	4.0
Wm. Landauer	3.8
John Corell	3.6
Jas. Batten	4.3
Jas. Batten	4.2
Jas. Wasley	3.9
Holman Bros.	4.0
Jas. Harvey	3.5
Charlie Williams	3.5

Monroe.

E. Trevitt	4.6
E. Trevitt	4.4
Charlie Goddard	4.2
Fred Tschudy	3.7
V. Morton	4.4
V. Morton	3.8
Geo. Stauffucher	3.8

Fox Lake.

Per ct. of fat.

F. Schultz	3.2
A. Bort	3.0
F. Brunn	3.7
John Walter	bottle broken.
Wm. Manto	3.4
F. Blossfeld	3.2
W. Doering	3.4
S. Machkovech	3.4
W. Baucer	3.0
W. Yarn	3.5
W. Ludwig	3.9
A. Machkovech	3.7
S. Zemlo	3.8
E. Hoffman	3.8
C. Hass	3.4
R. Kolell	3.2
C. S. Porter	3.6
M. Hueblein	3.8

Monroe.

Geo. Steltz	3.3
Geo. Steltz	3.1
Geo. Steltz	below standard.
Henry Sweney	3.6
Henry Sweney	4.0
Jas. VanMeter	3.1
Jas. VanMeter	3.2
Newton Baker	3.1
Newton Baker	3.2
Fritz Woolf	3.6
G. Hebner	below standard.
G. Hebner	below standard.
Mrs. M. Brasian	3.5
Gus. Morman	3.9
Gus. Morman	3.1
A. Neiffnicker	3.0
Geo. Drei	3.0
Geo. Drei	3.1
Geo. Drei	below standard.
G. Guddman	below standard.
G. Guddman	below standard.
G. Guddman	below standard.
Henry Rudy	3.1
Henry Rudy	3.3
G. Augsburg	3.5

Marshall.

E. A. Sanders	3.6
Wm. Porter	3.7
C. Beiterman	3.8
H. Streichd	3.6
O. Schultz	3.6
A. Radke	5.2
J. Blaskie	3.6
F. Kersten	4.2
C. Rothnic	4.2

	Per cent. of fat.
N. Zeldinger	3.6
Wm. Unger	3.8
Sam Boldt	3.5
Sam Boldt	4.4
Prochinger & Fechter	3.5
Prochinger & Fechter	3.8
Jas. Kowanda	4.7
Albert Brown	3.0

Beaver Dam.

Frank Krandle	4.4
Henry Baer	4.2
J. Krandle	4.2
John Frank	4.1
David Evans	4.0
Frank Frank	4.3
Valentine Smith	4.8
Joseph Hupf	4.0
Amos Wise	5.0
J. Groft	4.0
John Banas	4.2
Wm. Banas	3.9
Thos. Glassman	3.4
Geo. Heimler	3.6
Christian Krebs	3.2
Christian Krebs	4.2
Chris. Leitcher	3.6
Chris. Leitcher	4.6
J. R. Finney (mixed)	5.3
Wm. Prescott	4.2
Wm. Prescott	5.2
Henry Gabathuler	3.6
Ferd. Derge	3.8

Woodford.

M. Miller	3.8
A. Pahl	3.8
E. Mahlkop	4.0
John Johnson	4.1
Wm. Blazing	4.3
Miss M. Johnson	3.8
G. Butt	4.4
Charlie Wells	3.5
C. Rouske	4.2
C. Rouske	3.9
Wm. Gutsmer	3.7
Wm. Gutsmer	4.6
Gus. Miller	3.7
Gus. Miller	3.8
John S. Wells	4.5
D. D. Sawin	4.2
John Stubbs	4.0

Seymour.

John Wendt	3.7
August Sax (mixed)	3.7
Henry Brockman	3.6

	Per cent. of fat.
Aug. Voigt	3.5
Fred Smith	3.8
Fred Smith	4.6
Charley Mielke	3.0
Charley Mielke (mixed)	4.6
Fred Schultz	below standard.
Fred Schultz	5.0
Chas. Miller	3.6
Chas. Miller	4.5
Charley Rohm	below standard
Charley Rohm	4.4
Wm. Schultz	4.1
Henry Wendt	4.0
Wm. Zeigenbein	3.8
Chancey Daniels	4.0
Anton Lotter	4.1
Anton Lotter	4.2
Fred Nagle	4.8
Fred Nagle	3.7
Fred Nagle	4.0
Herman Schultz	3.8
Herman Schultz	4.7
Wm. Sherman	3.8
Fred Prelipp	4.3
Peter McDonough	3.9
Aug. Mailahm	4.2
Wm. Martin	3.5
Wm. Martin	4.2
A. Pollex	4.3
Chas. Teck	4.0
Chas. Teck	3.7
Julius Hintz	3.7
Mrs. H. Sipler	3.8
Aug. Krahn	3.7
Aug. Krahn	4.7
Aug. Goldensdt	4.0
John Hurst	3.6
John Hurst	4.6
Albert Brugger	3.6
Albert Brugger	3.9
Cnas. Kollath	3.5
Chas. Kollath	4.5
Wm. Eick (2 cans)	3.0
Wm. Eick	4.6
Fred Beckman	3.6
Fred Beckman	4.2
Henry Spoude	4.1
Henry Spoude	4.6
Sam Knox	3.7
Sam Knox	4.2
John Knox	3.8
John Knox	4.0
John Knox	4.0

Platteville.

Dick Miles	3.8
Jas. Condon	3.2
Jas. Condon	2.8

Report of the Wisconsin

	Per cent. of fat.
Henry Steinhoffer	3.8
Joseph Edge	3.4
Joseph Edge	4.8
Adolph Kuehl	3.2
Adolph Kuenl	5.0
John Callaway	4.0
Sam Poland	below standard.
Sam. Poland	4.6
Charley Dickinson	3.6
Warren Johnson	3.5
Warren Johnson	4.4
Thomas Kenny, Jr.	3.9
John Kenny	below standard
John Kenny	5.2
Thos. Kenny, Sr.	4.2
Peter Klingsmith	3.2
Edward Bride	4.0
Robert Hale	3.5
Henry Winke	4.0
Fred Byer	3.6
David Condry	3.9
David Condry	4.6
Jay Rewey	below standard
Jay Rewey	4.2
G. S. Whitcher	3.4
G. S. Whitcher	4.2
Isalah Butson	below standard
John Billings	3.2
Wm. Craven	3.8
Henry Snyder	3.8
John Billings	3.2
John Billings	4.0
G. S. Whitcher	4.6
Lee Whitcher	3.3
Lee Whitcher	4.5
Jas. McClurg	3.5
Jas. McClurg	5.4

Monroe.

Jeremiah Goodman	3.7
Jeremiah Goodman No. 2.	3.6
J. VanMeter	3.4
A. Neiffnicker	3.4
H. Sweeney	4.3
Mrs. O. Busjahn	4.4
Fred Woolf	3.7
Geo. Steitz	3.0
Geo. Steitz	2.9
Geo. Steitz	3.1
Fred Augsberger	4.0
Newton Baker	3.9
Newton Baker	4.0
Gus. Morman	3.6
Gus. Morman	4.0
Geo. Drye	3.4
Geo. Drye	3.2

	Per cent. of fat.
Henry Rohde	3.8
Henry Rohde	3.6
Fred Huebener	3.8

Tess Corners.

R. Wolmer	4.5
Sam Bass	4.2
Wm. Ludwig	3.7
Wm. Ludwig	4.5
Charlie Kurth	4.1
L. Pellman	3.5
L. Pellman	4.1
R. Holz	3.4
R. Holz	3.5
R. Holz	5.2
A. Laughney	3.2
A. Laughney	3.9
A. Riese	3.0
A. Riese	3.9
R. Kurth	4.2
R. Kurth	3.4
R. Kurth	3.7
John Nieman (mixed)	4.2
John Nieman	4.5
Otto Kripline	3.6
Henry Muehl	3.4
Henry Muehl	5.0
John Smith	3.1
John Smith	4.2
Charlie Smith	3.4
Charlie Smith	4.8
Charlie Martin	3.2
Charlie Martin	4.8
Wm. Martin	3.4
Wm. Martin	4.6
Barney Phillips	3.6
Barney Phillips	3.6
Mrs. Anna Goff	3.5
Mrs. Anna Goff	4.0
Julius Ruehl	4.4
Jullus Ruehle	4.7
John Burns	below standard.
John Burns	4.0
Charlie Dougherty	below standard.
Charlie Dougherty	5.1
Henry Boldt	3.2
Henry Boldt	3.8
Henry Boldt	4.0
Ed. Holz	4.4
P. Weinhoff	3.4
P. Weinhoff	4.5
F. Repke	3.7
F. Repke	4.6
I. Cobb	3.7
I. Cobb	4.4
I. Cobb	4.0
Phillip Gross	bottle broken.

	Per cent. of fat.
Phillip Gross	3.8
Phillip Gross	3.6
Phillip Gross	4.2
Phillip Gross	4.2

Monroe.

Mrs. Louisa Losberger.....	4.0
Wm. Chambers	4.0
Wm. Koepnick	3.8
South Bros.	3.6
Abraham Hefty	3.4
Frank Albright	3.6
W. F. Giese	3.4
John Becker	3.4

Hawthorn.

Perry Divan	5.2
Jas. Hoffman	4.4
Fred Dahms	4.4
Dan Haren	4.2
Zimri Beach	4.8
Geo. Bailey	4.5
Abner Drake	4.3
Anton Jenny	3.9
Turner Whitehead	5.0
Jacob Hoffman	4.0
John Hawthorn	4.0
Americas Adams	4.4
Gustav Schadewald	4.0
Peter Gnagl	3.6
Geo. Eaton	3.8
Ed. Wells	5.0
C. Wells	4.4
John Vogle	3.7
Harrison Campbell	4.4

Monroe.

Frank Dye	below standard.
Frank Dye	5.2
John Thomas	3.6
John Thomas	4.5
Alvin Kean	3.5
Alvin Kean	4.2
Gard Griffith	3.5
Gard Griffith	3.5
Cal. Griffith	3.2
Cal. Griffith	4.5
J. Klassy	4.0
G. Garwell	3.7
G. Garwell	4.7
Dick Thom	3.4
Dick Thom	4.3
O'Connor Bros	4.3
O'Connor Bros.	3.6
Fritz Kramer	4.3
J. Klassy	3.4

	Per cent. of fat.
Paul Disch	3.7
Paul Disch	3.8
Henry Elmer	3.0
Henry Elmer	4.0
Jos. Elmer	3.0
Jos. Elmer	3.0

Fennimore.

Henry McLimans	3.7
John Yunek	3.7
Geo. Finnegan	3.2
P. H. Finnegan	3.0
Fred Wehrle	4.1
Fred Wehrle	5.5
Dan Stredler	4.0
Al. Barnum	3.9
Abe Howell	3.6
Lou Doeringsfeld.....	below standard
Lou Doeringsfeld	4.2
Aug. Kress	3.4
Aug. Kress	4.7
Dick Kruel	3.5
Dick Kruel	4.8
Henry Vesperman	3.4
Charlie Napp	4.0
Jos. Edge	3.1
Jos. Edge	4.8
Lou Myer	3.8
Jay Morse	3.6
D. Dores	3.5
Isaac Keys	3.3
Isaac Keys	4.0
Eugene McDonald.....	4.0
Eugene McDonald	5.0
Harry Draggis	3.3
Thos. Edge	3.7
Thos. Edge	4.3
E. Baxter	3.6
E. Baxter	4.2
R. J. Jones	4.2
John Napp	4.0
Fred Rechter	3.2
Fred Rechter	3.4
F. Walker	3.2
R. J. Cohen.....	3.1
R. J. Cohen.....	4.8
Charlie Horton	5.4
Henry Roth	3.2
Henry Roth	4.0
A Swer	3.5
A. Wuepking (soured).....	...
A. Wuepking	4.6
Thos. Marisden	3.4
Thos. Marisden	4.5
C. Vesperman	3.5
C. Vesperman	4.2
John Steinfort.....	4.2
Taeo. Fisher	5.0

	Per cent. of fat.
Robt. Montgomery	3.8
F. Miller	4.3
F. Miller	4.2
John Swan	3.8

Black Creek.

Louis Duhm	below standard
Louis Lake	3.6
Louis Lake	4.0
Geo. Sasman	3.3
Geo. Sasman	4.6
W. H. Randall	4.6
Fred Wichman	3.5
Fred Wichman	3.9
Fred Sasman	4.0
Fred Sasman	4.4
Thos. McNich	4.0
Thos. McNich	4.8
Pat Devlin	3.9
Pat Devlin	4.2
John Hawthorn	4.6
John Hawthorn	3.8
Henry Krull	4.6
Aug. Krull	4.8
Charlie Michael	3.8
Charlie Michael	4.2
Charlie Michael	3.5
Henry Demand	4.0
Henry Demand	4.8
John Sasman	3.3
John Sasman	4.5
Henry Sasman	3.5
Henry Sasman	4.8
Wm. Gamm	below standard.
Finley Grandy	3.6
Finley Grandy	5.0
David Fitzgerald	4.2
Timothy Magansen	3.1
Timothy Magansen	4.2
Charley Hause	3.0
Jos. Krong	3.0
Jos. Krong	4.2
Martin. Tischhauser	4.0
Martin Tischhauser	4.7
Marke Harty	4.9
Wm. Missling	4.6
Wm. Missling	4.4
Wm. Missling	3.9
Charlie Gerhard	4.5

Fond du Lac City Milk.

Ogi Bros.	3.1
Diver's Dairy	4.2
Diver's Dairy	4.6
R. A. McCormick	4.9
B. Brown	3.1

	Per cent. of fat.
B. Brown	3.6
Lakeside Dairy	3.6
Lakeside Dairy	3.8
R. A. McCormick	3.4
Fitzsimmons	5.2
Wm Brush	3.6
C. W. Nast	4.4
S. C. Staunchfield	3.6
Boland Bros	4.1
Boland Bros.	4.4
G. S. Radliff	4.4
S. B. Staunchfield	4.0
S. C. Staunchfield	4.5
H. Kintzler & Bros.	3.4

Greenleaf.

A. J. Cronk	3.8
Henry Hesper	5.0
R. P. Russell	4.6
John Krueger	4.0
Herman Maede	3.7
Herman Maede	4.0
P. Mass	3.2
Geo. Baeten	3.8
G. Feldt	3.8
G. Feldt	5.2
Henry Baum	3.9
Henry Baum	4.6
Henry Vanderwort	4.3
Henry Vanderwort	4.4
Jule Wuerger	3.8
Jule Wuerger	4.2
S. Cornell	4.1
Peter Hahn	4.2
Peter Hahn	4.0
A. Manders	4.2
A. Manders	4.6
F. Spitz	4.4
F. Spitz	4.8
Henry Santze	4.1
Henry Santze	4.3
W. Bushmann	4.5
John Bushman	3.4
Albert Vanderwiter	3.2
Albert Vanderwiter	4.8
B. Day	3.4
O. Christian	3.8
O. Christian	4.0
John Hesper	4.6
C. Chase	4.1
Aug. Staben	4.1
Aug. Staben	4.2
Jac. Vandeusen	3.5
Wm. Spitz	3.6
Mike Somers	3.9
Jac. Brittnacher	4.2
John Brittnacher	4.2
John Clancy	3.9

Juda.

	Per ct. of fat.
Charlie Coates	4.5
Phillips Burns	3.8
Phillips Burns	4.5
Wm. Plantikow	4.1
Ezra Dunwiddie	4.5
Ezra Dunwiddie	4.0
Harvey Barmore	3.8
Harvey Barmore	4.8
Mrs. Geo. Lyman	4.1
C. Lahr	3.8
John Ronspelz	5.0
Fred Thom	4.2
W. S. Newman	4.2
W. S. Newman	4.5
E. P. Mitchell	4.2
E. P. Mitchell	3.4
D. T. Dunwiddie	4.0
Wm. Scholn	3.5
Wm. Dorn	4.2
Wm. Dorn	4.1
Otto Pinnow	3.8
H. Davis	4.0
Lyman Bros.	4.3
Davis Bros.	4.0
John Swan	4.4
John Legler	4.3
Peter Wohlwine	3.8
Jas. Stevens	4.0
A. Pinnow	4.5
L. Mackey	4.6
G. Lewis	4.0
G. Lewis	3.8
A. E. Divan	4.0
W. J. Newman	4.6
Henry Mohns	3.4
Henry Mohns	5.6
F. Miller	4.2
Robert Montgomery	3.4
Robert Montgomery	4.1
Oscar Stabler	4.4
Oscar Stabler	3.2
Jacob Berryman	4.2
Geo. West	4.2
Sam. West	3.9
L. Zentner	4.2
L. Zentner	4.5

Tustin.

Charley Springer	4.0
F. Scharland	4.2
F. Scharland	4.5
Fred Henschel	4.0
August Jahsman	3.9
August Jahsman	5.3
Adam Prelwite	4.1
Adam Prelwite	4.5
E. Schuelke	4.2
Gus. Bartle	3.6

Per cent. of fat.

Gus. Bartle	4.0
Henry Mayhefer	3.6
Henry Mayhefer	4.7
Herman Sasse	4.8
Herman Sasse	4.6
Martin Pelvitz	4.0
Martin Melvitz	4.4
Chris Greening	4.4
Chris Greening	4.2
Mrs. Tena Steinberg	4.3
Mrs. Tena Steinberg	3.8
Fred Wohlrahe	4.2
Gus Gabarl	3.8
Gus Gabarl	4.4
Gus Kannanburg	4.2
Charlie Benke	4.6

Seymour.

T. B. Little	3.9
Henry Krause	4.0
Herman Halling	4.5
Paul Butter	4.2
John Moore	4.8
Anton Loahman	5.0
Robert Butter	3.2
John Bloahm	4.0
Ed. Powers	3.9
Wm. Bartzke	3.9
August Fouster	4.3
Levi Munger	4.9
Geo. Muehl	3.6
Geo. Muehl	3.8
Albert Kolath	3.8
Albert Kolath	3.9
Louis Metzner	4.2
Louis Metzner	6.4
Aug. Sturm	bottle broken
Aug. Sturm	4.4
F. C. Witt	4.6
F. C. Witt	3.8
Ben Laeibheaber	3.6
Ben Laeibheaber	4.2
Ben Laeibheaber	4.2
Jake Heigle	4.6
Sam Sherman	4.0
Geo. Schurnberg	4.6
Geo. Schurnberg	4.8
Nick Trauffer	3.0
Nick Trauffer	4.4
John Moaser	4.6
Herman Pantz	4.0
Herman Pantz	3.1
Herman Mass	4.3
Chas. Smith	4.2
Chas. Smith	4.0
A. Krause	4.3
Aug. Mass	4.7
Phillip Knelkel	4.5

	Per cent. of fat.		Per cent. of fat.
Albert Durkee	4.3	Henry Hintz	4.0
Mrs. Anna Dorn	3.2	Jule Else	4.9
Fred Schweitzer	5.1	R. Bolse	3.6
Anton Nenise	4.3	Otto Wagner	4.6
<i>Burnett Junction.</i>			
August Luck	4.2	F. Frank	3.6
Wm. Luck	4.2	John Wandersee	4.1
Theodore Young	3.9	A. Kopp	4.1
August Schultz	4.3	Wm. Kelling	4.6
Herman Gruetzmacher	3.6	Charley Moldenhauer	3.8
Carl Pautsch	4.6	Mrs. W. Grossert	4.1
Carl Pautsch	4.0	Joseph Walters	5.2
Wm. Pautsch	3.8	Aug. Gohr	4.0
Wm. Pautsch	4.0	Fred Krause	5.0
Herman Luck	5.0	Henry Knack	5.5
<i>Blanchardville.</i>			
Dan McKillip	4.4	George Seitz	4.1
Patrick Darragh	4.5	John Pirkle	4.3
John McKillip	4.2	John Waber	4.4
Thos. Hanson	4.2	John Werner	3.4
Wm. Darragh	4.3	Charley Schloesser	4.3
Hans Carlson	4.2	August Kruegger	3.8
Jas. McIlhatton	4.6	John Banker	4.0
<i>E. Regez's Factory—Blanchardville.</i>			
Mike Coffy	4.7	Aug. Baars	4.3
Tom Durkin	4.2	T. Baars	3.5
Andrew Dorren	4.6	Aug. Bauman	4.5
Jane Rowe	4.1	Zeitler Bros.	4.4
Pat Downey	4.2	John Rogers	4.9
Mike Brennan	4.5	Charley Schroeder	4.6
<i>Johnson's Creek.</i>			
John Hase	4.0	Albert Zeitler	5.2
Albert Schattdhneider	3.9	F. Brunk	3.5
Louis Schumacher	4.0	Aug. Naatz	3.3
Henry Kottke	3.6	<i>Binghamton.</i>	
Albert Krueger	3.6	Albert Huse	4.4
Henry Stiehn	4.0	Charley Baker	4.0
Herman Brunk	3.8	John Tischauser	4.2
Dick Livingston	4.8	Charley Benning	4.0
Gus Stande	4.2	August Duhm	4.8
Gus Marks	4.3	Wm. Genske	4.4
Wm. Lindstedt	3.8	John F. Hinz	4.4
W. Becker	4.0	Geo. Leisgang	4.7
Charley Hamberscheld	4.1	Geo. Leisgang	5.2
Deldrich Mantz	4.1	Louis Sasman	4.6
Jule Nelson	4.6	Fred Korth	4.0
Charley Tabbert	5.0	John Casey	4.3
Gus Rissman	5.0	John Casey	5.0
Wille Stiehm	4.8	Wm. Wehrman	3.8
Geo. Baars	3.6	August Schmidt	4.0
John Klauch	5.1	Charles Wolf	4.4
John Tich	5.1	Wm. Riehl	4.7
		Andrew Fries	4.6
		Adam Cloos	4.2
		Lewis Mailahn	4.7
		Mrs. E. Briedenfeld	4.2
		F. Wisthoff	4.2
		Lyman Smolk	4.6
		W. Ruwoldt	4.6
		Wm. Behl	4.6
		Aug. Roll	4.0
		Wm. Czoschke	4.8

	Per ct. of fat.
Henry Lillge	4.4
Louis Breidenfeld	4.2
John Hoerning	5.0
Chas. Hoerning	4.2
Herman Wolf	4.2
Geo. Boser	3.5
Frank Van Doren	3.4
Albert Endtor	4.0
Mike Griesbach	4.5
James Wing	4.4
Aug. Kollath	4.5
Wm. Rusch	4.0
John Eickhoff	4.2
Aug. Wehrman	3.2
Conrad Sellberg	4.3
B. Griese	3.9
John Kennedy	4.0
Mrs. Jacob Scutt	4.2
Mrs. Jacob Scutt	4.2

Kenosha.

Richard Kirch	3.8
Blackman & Sons	3.6
J. A. Wells	3.4
J. A. Wells	4.7
J. Bentz	3.6
J. Bentz	4.2
Chas. Hiansis	4.3
Piper & Thomas	4.3
Piper & Thomas	5.2
P. Barth	5.2
Blackman & Sons	4.2
Thos. Wallis	4.2
E. F. Falk	3.8
E. A. Jensen	4.2
John Hartung	4.1
A. Sorenson	4.9
T. J. Irwin	4.2
L. H. French	5.0
A. Terry	3.6
Phil. Johannis	4.8

Juneau.

Aug. Ladwig	4.5
Louis Rupke	4.8
Aug. Swenzow	4.6
Henry Heihert	4.1
Aug. Affald	5.0
Herman Badle	4.6
Albert Swanz	5.4
Julius Kepsol	4.5
Chas. Tena	5.2

Brodhead.

L. O. Knudson	4.5
L. I. Fairman	5.0
Leslie Fairman	5.1

	Per ct. of fat.
G. M. Warner	3.9
Thos. Douglas	4.2
W. Rushiser	4.8
Wm. Engebritson	4.2
John Swain	5.3
J. McNair	4.3
P. L. Deidrick	4.2
A. Lunde	5.0
O. Knudson	5.2
O. Dixon	5.2
Mrs. E. Dixon	4.9
Henry Hendrickson	4.8
S. Swenson	4.4
P. Bye	4.5
H. Wendlandt	4.7
Will Benjamin	4.9
W. Springstead	5.4
Henry Benjamin	5.0
S. Sorensen	5.3
M. Jackson	4.0
M. L. Karney	4.0
B. N. Larson	4.4
G. H. Rosteigen	4.1
C. Gardner	4.0
Roy Stabler	4.2
David Austin	3.9
John Randall	3.9
Walter Douglas	4.9
Robert Stahlnecker	5.0
Wm. Stabler	4.0
August Giese	4.3
Manley Douglas	4.0
Wm. Coldren	4.7
Herman Giese	4.3
John Stahlnecker	4.7
M. L. Karney	4.0
Skim milk, Sept., No. 2	0.02
Skim milk, Sept., No. 1	0.03

Union Grove.

H. Olson	4.2
P. Larson	3.3
G. Hardy	4.2
H. C. Hanson	4.2
Mrs. J. Milldrum	4.2
Frank Adams	3.7
H. Rosendale	3.6
P. DeGroot	4.0
J. Meekma	3.5
C. DeGroot	3.8
J. DeGroot	3.7
H. Swantz	3.5
O. Esmond	3.1
John Beyer	4.0
J. Maurice	3.6
John Dextra	3.9
E. Barrows	4.0
C. Motley	3.5

Report of the Wisconsin

	Per ct. of fat.		Per ct. of fat.
F. Kiddle	3.8	Will Miller	4.1
P. Hanson	4.2	Henry Neip	4.0
J. Martin	3.8	J. S. Whitmore	4.0
A. Minton	4.4		
W. Roberts	4.0	<i>Green Bay.</i>	
J. Zulauf	3.5	August Giese	4.0
P. Maurice	3.7	W. Wilson	3.7
H. Monroe	3.4	W. Wilson	3.5
F. Swantz	3.7	M. McGuire	3.8
		H. Armstrong	4.4
<i>Elkhorn.</i>		N. Anderson	4.3
J. H. Zigg	3.8	H. Williamson	4.2
F. W. Houghton	4.3	H. E. Wilson	4.2
O. Pratt	3.7	N. Anderson	4.5
O. Vaughn	4.4	J. Mickelson	4.0
Haslow & Co.	4.3	H. J. Kuehl	3.8
Mark Foot	5.2	J. Lan & Sons	4.0
E. Merick	3.5	Henry Vandenheuvuel	4.1
Ed. Weiners	4.2		
Frank Humbert	4.2	<i>Eau Claire.</i>	
Belle & Co.	3.8	L. Tower	3.6
Tom Decoudres	4.2	J. C. Barland	3.8
L. Humbert	3.5	Amos Goff	3.0
George Vaughn	3.9	J. Johnson	3.6
George Camer	4.0	Phillip Fitzpatrick	3.5
Nick Camer	3.8	C. H. Johnson	3.3
Will Paulsen	4.1	B. R. Barland	4.6
J. Brierly	4.4	Geo. D. Wood	4.1
A. Paulson	4.4	S. M. Olin	3.4
C. H. Phelps	4.1	Samuel Guthrie	4.4
Wm. Mitchell	4.2	S. R. Dunham	3.7
Wm. Blout	4.6	D. Neuser	4.1
H. Vaughn	3.8		
George Fratt	3.6	<i>Oconomowoc.</i>	
Merrick & Co.	3.4	E. S. Stone	3.8
A. S. Wortman	4.1	W. B. Fay	3.8
W. I. Loomis	4.1	W. S. Bibble	3.6
Tom Matson	3.2	W. M. Jones	4.1
Paulsen, Sr.	4.3	Isaac Denton	4.0
Mayhew & Co.	4.0	Fred Fidler	4.2
Jrte Schlede	3.6	E. W. Barnard	3.5
Wm. Falk	4.2	Bartlett Estate	4.2
Forge & Son	4.1	P. Henricson	4.2
Fred Zabler	3.0	Gus Voght	3.8
G. Merrick	3.6	N. M. Hill	4.0
Wm. Zabler	4.0	A. Stone	4.4
Frank Miller	4.4	W. A. Jones	3.7
Wm. Vaughn	4.8	W. E. Bailey	3.5
Frank Patton	3.8	Frank Rohloff	4.5
A. Clark	4.0	O. P. Chubb	4.0
P. Nelson	4.6		
Charley Meyers	4.1	<i>Cambria.</i>	
George Williams	3.7	John Shepp	3.5
Chas. Kadow	4.7	Charlie Martin	3.3
J. C. Greenman	4.3	Gust. Schatz	3.6
Joseph Forge	3.3	Henry Richter	3.8
E. Whitmore	4.2		
Bert Whitmore	4.8		
Relck Bros.	4.6		

	Per ct. of fat.
Henry Huffman	3.5
Herman Lueptow	3.7
Conrad Weisel	3.3
John Bender	3.8
Chris. Umbreit	3.5
Philip Probst	3.6
August Schatz	3.8
Peter Kumba	3.5
Godfrey Winne	3.4
Casper Weisel	4.0
L. H. Koepf	3.8
Jacob Heinz	3.9
John Lipthite	3.8
Charlie Schatz	4.0
Conrad Shepp	4.4

Palmyra.

Robert Charley	4.0
Geo. Mann	3.3
Charley Perry	4.3
Henry Buths	3.5
Henry Buths	3.4
Thos. Hitch	3.3
Ed. Hooper	3.6
Ed. Peardon	3.6
Ed. Peardon	3.9
M. Piper	3.5
John Stacy	4.0
W. Gilbert	4.4
F. Rodgers	3.1
F. Vonruedon	below standard.
John Stacy	4.2
J. French	3.9
W. P. Gates	3.6
W. Pluis	3.9
W. Pluis	3.9
W. Burton	4.3
J. Lean	4.4
G. Spaulding	4.1
W. Richardson	3.8
R. H. Turner	below standard
R. H. Turner	3.8
F. Rodgers	3.8
J. Stinhoff	3.6

Skimmed milk, small trace of butter fat, not to exceed one-tenth of one per cent.

Johnson's Creek.

F. Ruske	3.2
Chas. Barmann	3.8
Jim Schlasner	3.8
W. Patratz	5.6
H. Buske	3.9
C. Dunning	3.6
Mrs. W. Buske	4.2
Adam Ridelbauch	3.5
F. Schumacher	3.1

	Per ct. of fat.
J. Spletstoesser	3.0
Aug. Sydow	3.5
F. Thornticke	3.2
Ed. Frank	3.1
Otto Sydow	3.3
C. F. Reese	3.3
John Rees	3.2
John Reese	3.9
Mrs. F. Bartelt	4.2
F. Keipert	3.6
E. Staude	3.6
T. Knaack	3.8
H. Rhadams	3.6
H. Rhadams	4.0
H. Rhaabe	3.5
I. Vogt	3.8
R. Wolff	3.6
C. Heine	3.4
John Mohr	4.3
John Schlasner	4.0
Charley Buke	3.7
H. Jabnke	3.8
John Wolfgram	3.3
John Wolfgram	4.2
Fred Reibe	4.0
Geo. Keoppel	3.0
Aug. Grunert	3.6
W. Pautz	3.2
Herman Kiepert	3.7
G. Kothlow	3.8
W. Zindars	3.7
R. Stinke	3.0
Aug. Tilka	3.8
E. Voss	3.6
Mrs. N. Nutting	3.8
C. N. Nutting	3.9
Mike Dehnest	3.4
Louis Wolfgram	3.8
Aug. Borchardt	3.9
W. B. Mathews	4.0
Mrs. Borchardt	4.1
Charley Borchardt	4.4
John Heine	4.1
W. Borchardt	3.9
Thos. Peny	4.5
C. F. Schultz	3.7

Simply a trace of butter fat in each sample of skimmed milk taken, not to exceed one-tenth of one per cent.

Red Rock.

John Kil Kelly	below standard.
J. T. Morgan	3.3
Wm. Wilson	3.5
John Wilson	3.6
Frank Steel	3.4
J. McGettigan	3.8
Jas. Sanders	4.0

Report of the Wisconsin

	Per ct. of fat.
Henry Kinneman	3.4
R. M. Thompson	3.5
Sample of skimmed milk contained two-tenths of 1 per cent.	

Juneau.

Henry Rueger	3.8
Herman Bottle	3.6
Aug. Dukerscheim	3.8
Aug. Dukerscheim	3.5
Louis Luebke	3.9
Charlie Thieme, Jr.	3.6
Aug. Schwensow	3.3
Gustave Ladwig	3.4
Gustave Ladwig	3.0
Julius Kiepsel	3.5
Julius Kiepsel	2.9
Fred Luk	3.2
Godfrit Schultz	3.6
Godfrit Schultz	3.0
Frank Thieme	3.3
Chas. Thieme, Sr.	3.2
Chas. Thieme, Sr.	3.3
Albert Schwantz	3.4

Sullivan.

J. Hinzmann	3.5
C. Vinz	4.2
John Georgeon	3.4
W. Friday	3.6
H. Krohn, Jr.	3.6
Pat. Schollard	4.3
L. Raiser	3.9
M. Brannon	3.7
A. Vinz	3.7
H. Will, Jr.	3.2
W. Myer	3.5
W. Graeszel	3.7
G. Rummel	4.0
C. Wenner	3.5
J. Carrol	3.8
H. Newton	4.2
W. Krueger	3.9
W. Lee	4.2
Gus Neftmann	3.8
A. C. Ecker	sour.
S. Lee	3.8
A. Notboun	3.3
Geo. L. Garity	4.3
Humboldt Brös.	3.3
H. Wenzel	3.8
F. Wenzel	3.7
Wm. Tohn	4.3
H. Kitzmann	3.5
John Boetcher	4.4

	Per ct. of fat.
J. Gleighman	3.8
E. Hensey	3.4
H. Zeddies	3.2
A. Zastrow	4.3
H. Krohn, Sr.	3.6
D. Higbie	3.6
Frank Newton	3.3
Mrs. Rora Mistely	3.3
J. Trader	3.9
W. Yaugert	3.7
G. Bentria	3.6
D. Marsch	3.3
H. Grobb	sour.
Fred Lee	3.9
A. Halbrader	4.0
H. Will, Sr.	3.8
T. Burrow	sour.
F. Raiser	3.5
Pat Garity	4.3
Thos. Scollard	sour.

Orfordville.

S. B. Gilbert	3.7
John Richmond	4.1
H. Vinger	3.6
Peter Foss	3.9
H. Anderson	4.2
Geo. Olson	3.7
Nels Larson	3.5
Ole Storlie	3.9
Chris. Paulson	3.3
Andrew Shirley	3.1
Ole Staverdahl	3.4
Andrew Sveom	3.4
Hans Gilbert	3.9
Mrs. T. E. Myhre	3.9
Jas. Ward	4.0
H. Overlande	3.9
G. T. Hanson	4.3

Cambridge.

John Davis	3.8
E. H. Behm	3.5
C. Birkrem	4.3
Otto Rumpf	3.7
A. Eshke	4.3
A. G. Johnson	3.3
O. C. Larson	3.7
W. Pofflow	4.4
F. Lewis	4.4
C. Becker	3.9
John Nettum	4.2
R. Shmidt	3.7
John A. Johnson	3.6
John Krippner	4.3

	Per ct. of fat.
C. Lespewske	3.6
M. Ramsey	3.7
H. J. West	4.4
John Geerke	3.9
E. Jaeger	4.3
H. B. Prescott	3.7
C. Simdon	3.5
W. Simdon	3.9
A. Ottow	3.8
Geo. Green	3.7
Geo. Armstrong	4.1
A. Plum	4.0
A. Surms	4.3
M. Anderson	4.3
C. M. Larson	4.1
Peter Larson	3.5
Betsy Anderson	3.5
G. C. Larson	4.5
O. Asje	4.2
O. Askin	3.7
Matt Larson	4.2
J. B. Lind	4.1
Gus. Retzlof	3.8
T. Gehrke	4.0
W. Krause	3.7
A. Drager	4.0
Mrs. Ole Fjhelstad	4.0
Sam Brounty	4.0
Pet Swanson	3.7

Tustin.

Robert Winter	3.8
Wm. Winter	3.5
Henry Teska	3.8
John Hartfield	3.5
John Hartfield	3.5
Ed. Zempel	3.2
Ed. Zempel	4.0
Gus Berlin	3.6
Gus Berlin	3.8
Wm. Folendorf	3.0
Wm. Folendorf	4.1
Wm. Gruening	3.3
Fred Mundinger	3.1
Fred Mundinger	4.2
Robt. Winter	3.8
Geo. Kopitzke	3.3
Geo. Kopitzke	3.7
Godlieb Socheska	3.4
Godlieb Socheska	4.0
Wm. Mundenger	3.9
Wm. Mundenger	4.6
Albert Radichel	3.2
Albert Radichel	4.5
Aug. Abraham	3.2
Aug. Abraham	3.6
Aug. Strey	3.2
Aug. Strey	3.0

Verona.

	Per ct. of fat.
Mrs. Mary Messer	below standard.
Lewis Kittleson	4.7
Knudt Boa	4.0
W. Lust	4.2
John Kittleson	4.2
John Way	3.8
Karl Kolb	4.2
Albert Herring	3.4
Sam Wittwer	3.4
Herman Hankel	4.3
Mike Hobbs	4.5
Martin Hobbs	4.0
Henry Regge	4.1

Tustin.

Fred Gruening	2.5
Fred Gruening	3.9
Wm. Klotsbicker	2.6
Wm. Klotsbicker	3.4

West Bend.

F. Schneider	3.2
F. Schneider	4.2
Geo. McCormack	3.0
Geo. McCormack	3.5
Mrs. Nick Schneider	3.9
M. J. Morawetz	3.5
M. J. Morawetz	4.0
Nick Bales	3.6
Chas. Gomber	3.4
Chas. Gomber	4.2
Geo. Arnet	4.0
B. W. Barber	4.0
Henry Thill	4.0
John Krell	3.7
John Krell	4.0
Don Cameron	3.3
E. M. Nash	4.0
A. Debeno	3.8
A. Debeno	3.8

Madison.

Karl Stahl	3.7
David Martin	3.7
Will Krueger	3.8
Delos Wells	4.0
Jacob Long	3.4
James Blaine	3.7
Jeremiah Caton	3.8
C. Bayerhoffer	3.2
W. Rosenthal	3.6
Will Schneider	3.6
David Stauffacher	4.0
Chris. Tochtorman, Jr.	3.4

Report of the Wisconsin

Waupun.	
	Per ct. of fat.
Geo. Galland	3.2
B. Finnegan	3.8
J. Schmidt	3.0
J. Gunther	4.0
A. Chase	3.5
F. Chase	3.5
F. Chase	4.3
W. Gallon	3.2
W. Gallon	4.3
E. A. Lang	3.4
Geo. Lang	4.0
Geo. Lang	4.7
A. Morehouse	3.0
A. Morehouse	4.3
F. Block	below standard.
F. Block	below standard.
O. Wustrack	3.8
O. Wustrack	4.8
A. Wustrack	3.7
E. Emigh	3.5
E. Emigh	4.6
E. Winke	3.2
E. Winke	3.8
G. Higgins	3.8
G. Higgins	3.6
E. Ringenfelter	below standard.
E. Ringenfelter	3.4

Aurora.

Jos. Boden	3.9
Peter Boden	3.4
Peter Boden	4.1
Mike Mennier	3.2
Henry Dellenbach	below standard.
Paul Seyfert	3.9
Henry Treutel	4.5
Henry Treutel	4.5
John Weber	4.5
John Hosp	3.7
Eilert Peters	3.8
Nick Lahr	3.7
Nick Lahr	4.8
Lewis Paff	4.0
Lewis Paff	3.8
Peter Luis	3.7
Adam Mennier	3.6
Chas. Becker	below standard.
Chas. Becker	3.6

Polk.

John Bridge	4.2
John Boyer	4.1
Robt. Ruf	3.9
M. L. Schoeder	5.1
Mike Kruegger	4.6
Jack Schwartz	4.6
Herman Mauerman	3.7

	Per ct. of fat.
Arthur Davis	4.7
John Fritch	4.0
E. Grenzow	4.7
Will Pick	4.1
Will Guinte	4.2
Jos. Miller	4.1

Ripon.

1. Herman Thiel	3.0
2. Herman Thiel	2.65

Mt. Horeb.

Peter Husath	4.0
Sever Veum	3.6
H. A. Husath	3.8
Henry Ottum	3.7
Hans Haakenass	4.0
H. Grannum (spec. grav. 1.030)	3.2
T. Peterson	3.4
Michael Johnson	3.4

Monroe.

A. Kryder	3.3
John Alexander	3.8
Geo. Davis	3.7
Fraustchy Bros.	4.0
Jos. Mattress	3.8
J. Hofmaister	3.5
H. L. Davis	3.5
S. Bradley	3.5
Geo. Williams	4.1
W. H. Zimmerman	3.2
Ben Davis	3.7
Nick White	3.2
Jos. Bradley	3.7
Eli Shook	3.6
John Zimmermann'	3.1
John Kryder	3.7
Charlie Kryder	3.6

Monroe.

Eddie Brannen	3.4
John Winters	3.8
H. W. True	3.1
Chris Winters	3.7
Chris Bush	4.4
Frank Brannen	3.8
Charlie Winters	3.4
Frank Van Matra	3.5
J. Dornedan	4.0
R. D. Blubaugh	3.8
John D. Brannen	3.3
L. Ganshirt	3.5

REPORT OF DAIRY INSPECTOR, N. J. FIELD.

- Fred Leichtfass, 36th and Fond du Lac Sts., Wauwatosa; number of cows, 2; condition of stock, good; stables, fairly clean; feed, bran, middlings and hay; well water. Inspected June 11th, 1897.
- Herman Becker, 37th and Fond du Lac Sts., Wauwatosa; number of cows, 3; stables and utensils, clean; feed, middlings, bran, hay and brewery grains; well water. Inspected June 11th, 1897.
- J. F. Painter, Fond du Lac Road, Milwaukee; number of cows, 27; condition of stock, first class; stables, clean and well ventilated; utensils, clean; feed, brewers' grains, middlings and clover hay; well water. This is a first-class dairy. Inspected June 12th, 1897.
- Conrad Paster, South City Limits, Milwaukee; number of cows, 65; condition of stock, good; stables, clean; utensils, clean; feed, corn meal, brewery grains and middlings; well and city water. Inspected June 14th, 1897.
- Frank Freutz, Newcomb Road, Toll Gate, Milwaukee; number of cows, 14; condition of stock, good; stables, not clean; utensils, fairly clean; feed, middlings and bran; well water. Inspected June 14, 1897.
- J. W. Becker, Cudahy; number of cows, 19; condition of stock, good; stables, clean; utensils, clean; feed, pasture grass; well water. Inspected June 14, 1897.
- Albert Meesick, near Sercomb Road, Milwaukee; number of cows, 4; condition of stock, good; stables, not clean; utensils, clean; well water. Inspected June 14, 1897.
- John Wooster, Layton Park, Milwaukee; number of cows, 3; condition of stock, good; condition of stables, good; utensils, clean; feed, bran, middlings and pasture grass; well water. Inspected June 14, 1897.
- Chris Guenther, Greenfield; number of cows, 13; condition of stock, good; stables, clean; utensils, clean; feed, bran, middlings and pasture grass; well water. Inspected June 14, 1897.
- W. C. Freutz, Toll Gate Road, Milwaukee; number of cows, 17; condition of stock, good; stables, clean; utensils, clean and bright; feed, bran, middlings and pasture grass; well water. Inspected June 14, 1897.
- Nicolas Schmidt, 2713 Walnut St., Milwaukee; number of cows, 7; condition of stock, ———; stables, in fairly good condition; utensils, clean; feed, middlings, brewery grains, linseed meal and hay; well water. Inspected June 16, 1897.
- Gustav Kaun, 37th and Fond du Lac Sts., Milwaukee; number of cows, 6; condition of stock, good; stables, well kept; utensils, clean; feed, brewery grains, middlings and hay; well water. Inspected June 11, 1897.
- Hadler & Webster, Greenfield; number of cows, 36; condition of stock, good; stables, in excellent condition; utensils, clean; feed, middlings, bran and corn meal; well water. Inspected June 11, 1897.
- Chas. Dana, Greenfield; number of cows, 39; condition of stock, excellent; stables, very clean; utensils, clean; feed, corn stalks, corn meal, brewery grain; well water. Inspected June 11, 1897.
- Jac. Meyer, Fond du Lac Road, Milwaukee; number of cows, 12; condition of stock, clean and healthy; stables, clean; utensils, clean; feed, middlings, brewers' grain and pasture grass; well water. Inspected June 12, 1897.

- Albert Court, Toll Gate Road ; number of cows, 23 ; stables in filthy condition ; feed, middlings, brewers' grains, badly fermented, and pasture grass.
- Fred Nepo, Sercomb Road ; number of cows, 5 ; condition of stock, good ; stables, fair ; utensils, clean ; feed, pasture ; spring water. Inspected July 12, 1897.
- Herman F. Luscher, Hopkins Road ; number of cows, 24 ; condition of stock, good ; stables, clean ; utensils, clean ; feed, brewers' grains, bran and pasture ; well water. Inspected July 12, 1897.
- F. A. Zautke, County Road ; number of cows, 44 ; condition of stock, good ; stables, clean ; utensils, clean ; feed, clover grass and ensilage ; well water. A most excellently kept establishment. Inspected July 13, 1897.
- I. Keller, Hopkins Road ; number of cows, 24 ; condition of stock, good ; stables, clean ; utensils, clean ; feed, middlings, bran and hay, pasture ; well water. Inspected July 13, 1897.
- N. Smith & Co., Oakland Ave. ; number of cows, 36 ; condition of stock, good ; stables, clean ; utensils, clean ; well water. Nursing milk establishment ; excellent. Inspected July 14, 1897.
- Otto Ianhuke, Mineral Spring Crossing ; number of cows, 18 ; condition of stock, good ; stables, fair ; utensils, not clean ; feed, pasture ; well water. Milk not kept in clean places ; warned to clean up ; will visit again. Inspected July 14, 1897.
- Julius Lockstead, White Fish Bay Road ; number of cows, 3 ; condition of stock, good ; stables, good ; utensils, clean ; feed, bran, middlings and pasture ; well water. Inspected July 14, 1897.
- Chas. Lochstead, Oakland Ave. ; number of cows, 6 ; condition of stock, good ; stables, clean ; utensils, clean ; feed, bran, middlings and pasture ; well water. Inspected July 14, 1897.
- Wm. Grenhardt, 29th St. and Lincoln Ave. ; number of cows, 22 ; condition of stock, good ; stables, clean ; utensils, clean ; feed, vinegar slops, middlings and pasture ; well water. Requested discontinuance of vinegar slops. Inspected July 15, 1897.
- Wm. Finger, Holley Road ; number of cows, 30 ; condition of stock, good ; stables, good ; utensils, clean ; feed, brewers' grains, middlings and pasture ; well water. Excellent dairy. Inspected July 15, 1897.
- Gotlieb Pasbut, Lincoln Av., Wauwatosa ; number of cows, 16 ; condition of stock, good ; stables, clean ; utensils, clean ; feed, brewers' grains ; well water. Inspected July 15, 1897.
- II. Rahn, Holley Road ; number of cows, 7 ; condition of stock, good ; stables, good ; utensils, clean ; feed, brewers' grains, cornmeal and pasture ; well water. Inspected July 15, 1897.
- Edward Harmon, Lake Road, Wauwatosa ; number of cows, 28 ; condition of stock, good ; stables, clean ; utensils, clean ; feed, brewers' grains and pasture ; well water. Inspected July 16, 1897.
- Gustave Cohhardt, Wauwatosa ; number of cows, 10 ; condition of stock, good ; stables, clean ; utensils, clean ; feed, brewers' grains and pasture ; well water. Inspected July 16, 1897.
- Herman Daunenber, Burleigh Road ; number of cows, 16 ; condition of stock, good ; stables, clean ; utensils, clean ; feed, brewers' grains and pasture ; well water. Inspected July 16, 1897.
- Ferdinand Schultz, Burleigh Road ; number of cows, 23 ; condition of stock, good ; stables, clean ; utensils, clean ; feed, brewers' grains and pasture ; well water. Inspected July 16, 1897.
- Fred Becker, Burleigh Road ; number of cows, 9 ; condition of stock, good ; stables, clean ; utensils, clean ; feed, brewers' grains and pasture ; well water. Inspected July 16, 1897.
- Gustave Kann, Burleigh Road ; number of cows, 11 ; condition of stock, good ; stables, clean ; utensils, clean ; feed, brewers' grains and pasture ; well water. Inspected July 16, 1897.
- Peter Bonerz, Lisbon Road, Wauwatosa ; number of cows, 15 ; condition of stock, good ; stables, clean ; utensils, clean ; feed, brewers' grains and pasture ; well water. Inspected July 20, 1897.

- Albert Sieverts, North Avenue Road, Wauwatosa; number of cows, 12; condition of stock, good; stables, clean; utensils, clean; feed, pasture; well water. Inspected July 20, 1897.
- Wm. Dubratz, North Avenue Road, Wauwatosa; number of cows, 16; condition of stock, good; stables, good; utensils, clean; feed, pasture; well water. Inspected July 20, 1897.
- Frank H. Nichols, Vliet Street Road, Wauwatosa; number of cows, 6; condition of stock, good; stables, clean; utensils, clean; feed, pasture; well water. Inspected July 20, 1897.
- Adolph Siedo, North Avenue Road, Wauwatosa; number of cows, 8; condition of stock, good; stables, clean; utensils, clean; feed, pasture; well water. Inspected July 20, 1897.
- John Hupher, 44th Street, West Wauwatosa; number of cows, 8; condition of stock, good; stables, clean; utensils, clean; feed, corn meal, middlings, brewers' grains and pasture; well water. Inspected July 20, 1897.
- Fred Schrub, Watertown Plank Road, Wauwatosa; number of cows, 40; condition of stock, good; stables, clean; utensils, clean; feed, pasture; well water. Inspected July 21, 1897.
- Andrew Slotzman, Second Avenue Road, Town Lake; number of cows, 7; condition of stock, good; stables, clean; utensils, clean; feed, brewers' grains; well water. Inspected July 23, 1897.
- John Miller, 8th Avenue Road, Town Lake; number of cows, 9; condition of stock, good; stables, clean; utensils, clean; feed, brewers' grains, some vinegar slops and corn meal; well water. Requested discontinuance of vinegar slops. Inspected July 23, 1897.
- Adolph Gritner, 8th Avenue Road, Town Lake; number of cows, 35; condition of stock, good; stables, clean; utensils, clean; feed, brewers' grains, middlings, bran and pasture; well water. Excellent dairy. Inspected July 23, 1897.
- John Prozy, 5th Ave., Town Lake; number of cows, 6; condition of stock, good; stables, clean; utensils, clean; feed, brewers' grains and pasture; well water. Inspected July 23, 1897.
- Wm. Froeming, 8th Ave., Town Lake; number of cows, 14; condition of stock, good; stables, clean; utensils, clean; feed, brewers' grains and pasture; well water. Inspected July 23, 1897.
- William Kilps, 11th Ave., Town Lake; number of cows, 3; condition of stock, good; stables, clean; utensils, clean; feed, brewers' grains and pasture; well water. Inspected July 23, 1897.
- Winston Brand, 11th Ave., Town Lake; number of cows, 23; condition of stock, good; stables, clean; utensils, clean; feed, brewers' grains, vinegar slops, half and half; well water. Requested discontinuance of vinegar slops. Inspected July 23, 1897.
- M. Malecki, 11th Ave., Town Lake; number of cows, 6; condition of stock, good; stables, clean; utensils, clean; feed, brewers' grains, vinegar slops, corn meal and pasture; well water. Requested discontinuance of vinegar slops. Inspected July 23, 1897.
- Frank A. Zoebel, Lake Road, Cudahy; number of cows, 3; condition of stock, good; stables, clean; utensils, clean; feed, bran and pasture; well water. Inspected July 26, 1897.
- Chas. Siegel, Chicago Road; number of cows, 52; condition of stock, good; stables, clean; utensils, clean; feed, bran, middlings and pasture; well water. Inspected July 26, 1897.
- Chas. Loss, Lake Road, Town Lake; number of cows, 11; condition of stock, good; stables, clean; utensils, clean; feed, corn meal, oats, pasture and ensilage; well water. Inspected July 26, 1897.
- John Vaukafski, 8th Ave., Town Lake; number of cows, 1; condition of stock, good; stables, clean; utensils, clean; feed, pasture; well water. Inspected July 27, 1897.
- Chas. Uhlenberg, 8th Ave., Town Lake; number of cows, 12; condition of stock, good; stables, clean; utensils, clean; feed, brewers' grains and pasture; well water. Inspected July 27, 1897.

- Laurence Smith, Sth Ave., Town Lake; number of cows, 7; condition of stock, good; stables, clean; utensils, clean; feed, brewers' grains and pasture; city water. Inspected July 27, 1897.
- I. Karth, Oklahoma Road, Town Lake; number of cows, 35; condition of stock, good; stables, clean; utensils, clean; feed, brewers' grains, corn meal and pasture; well water. Inspected July 27, 1897.
- Christ Speicht, Janesville Plank Road, Town Greenfield; number of cows, 20; condition of stock, good; stables, clean; utensils, clean; feed, corn meal and pasture; well water. Inspected July 28, 1897.
- B. Jungbluth, Janesville Plank Road, Root Creek; number of cows, 19; condition of stock, good; stables, clean; utensils, clean; feed, bran and pasture; well water. Inspected July 28, 1897.
- Irwin Cabb, plank road half mile south of Hale's Corners; number of cows, 12; condition of stock, good; stables, clean; utensils, clean; feed, pasture; spring water. Inspected July 28, 1897.
- A. F. Reppke, plank road, one mile southwest of Hale's Corners; number of cows, 10; condition of stock, good; stables, clean; utensils, clean; feed, pasture; well water. Inspected July 28, 1897.
- Horlick's Food Co., post office, Racine, Rapids Road; number of cows, 120; condition of stock, good; stables, very clean; utensils, perfectly clean; well water. Inspected November 6, 1897.
- Jacob M. Brown, Racine post office, Milwaukee Road; number of cows, 4; condition of stock, good; stables, O. K.; utensils, clean; feed, hay, corn meal and corn stalks; well water. Inspected November 6, 1897.
- Wm. Koefford, Racine post office, Milwaukee Road; number of cows, 20; condition of stock, good; stables, clean; utensils, clean; feed, corn and hay; well water. Inspected November 6, 1897.
- S. Knutson, Racine post office, Milwaukee Road; number of cows, 20; condition of stock, good; stables, clean; utensils, clean; feed, oats, cornstalks and hay; well water. Inspected November 6, 1897.
- Hans Iverson, Racine post office, Milwaukee Road; number of cows, 13; condition of stock, good; stables, clean; utensils, clean; feed, barley and oats mixed, corn meal and hay; well water. Inspected November 6, 1897.
- Joseph Rowley, Middle Road, post office, Racine, Wis.; number of cows, 30; condition of stock, very good; stables, whitewashed and floor sprinkled with lime; utensils, very clean; feed, hay, corn stalks, corn and oats ground; well water; milk house, very clean; yards, clean. Inspected November 9, 1897.
- Joseph Rowley, Middle Road, post office, Racine, Wis.; number of cows, 33; condition of stock, very good; stables, whitewashed, floor sprinkled with lime; utensils, very clean; feed, hay, corn stalks, corn and oats ground; well water; milk house, very clean; yards, clean. Inspected November 9, 1897.
- H. Y. Troutwain, Middle Road, post office, Racine, Wis.; number of cows, 32; condition of stock, very good; stables, whitewashed, floor sprinkled with lime; utensils, very clean; feed, hay, corn stalks, corn and oats ground; well water. Stable yard paved with pine blocks; a first-class establishment. Inspected November 9, 1897.
- Evan J. Jones, Franksville Road, post office, Racine, Wis.; number of cows, 38; condition of stock, very good; stables, whitewashed walls, very clean; utensils, very clean; feed, hay, corn, corn stalks, bran and middlings; well water. Most excellent dairy. Inspected November 9, 1897.
- Soren Hansen, Franksville Road, post office, Racine, Wis.; number of cows, 30; condition of stock, excellent; stables, clean; utensils, clean; good milkhouse; feed, hay, bran, oats, middlings and corn meal; well water. Good dairy. Inspected November 9, 1897.
- C. A. Werstern, Rapids Road, post office, Racine; number of cows, 65; condition of stock, excellent; stables, clean, whitewashed walls, lime on floor; utensils, perfectly clean; feed, oats, bran and hay; well water. A most excellent dairy; everything in the best of order. Inspected November 9, 1897.
- J. French, Franksville Road, post office, Racine; number of cows, 46; condition of stock, good; stables, very clean; utensils, clean; feed, hay, corn and corn stalks; well water. Clean dairy. Inspected November 10, 1897.

- Chris. Banks, Middle Road, post office, Racine; number of cows, 10; condition of cows, good; stables, whitewashed and clean; utensils, clean; feed, hay, corn and corn stalks; well water. Inspected November 10, 1897.
- E. H. Perkins, Middle Road, post office, Racine; number of cows, 37; condition of stock, good; stables, very clean; utensils, clean; feed, hay, corn and corn stalks; well water. Very good barn. Inspected November 10, 1897.
- Wm. Peterson, Franksville Road, post office, Racine; number of cows, 16; condition of stock, good; stables, clean; utensils, clean; feed, hay and corn stalks; well water. Clean dairy. Inspected November 10, 1897.
- Jacob Stanness, Stage Road, post office, Franksville; number of cows, 12; condition of stock, good; stables, clean; utensils, clean; feed, hay, corn, bran and corn stalks; well water. Inspected November 12, 1897.
- Henry Houch, Old Stage Road, post office, Racine; number of cows, 26; condition of stock, very good; stables, good; utensils, clean; feed, hay, bran, mill feed, corn and oats; well water. Very clean dairy. Inspected November 12, 1897.
- P. J. Williams, Old Stage Road, post office, Racine; number of cows, 26; condition of stock, good; stables, clean; utensils, clean; feed, hay, corn, bran and ground feed; well water. Good barn; very clean dairy. Inspected November 12, 1897.
- J. O. Thomas, Town Caledonia, post office, Linwood; number of cows, 32; condition of stock, very good; stables, very clean; utensils, clean; feed, hay, bran, corn and corn stalks; water, well in winter, Root river in summer. Very clean dairy. Inspected November 12, 1897.
- Walter Mann, Old Stage Road, post office, Racine; number of cows, 25; condition of stock, good; stables, clean, whitewashed; utensils, clean; feed, hay, corn, cut feed, corn meal and bran; well water. Excellent dairy. Inspected November 12, 1897.
- Geo. Kattenschnee, Old Stage Road, post office, Racine; number of cows, 17; condition of stock, good; stables, very clean; utensils, clean; feed, hay, corn, oats and corn stalks; well water. Clean dairy. Inspected November 12, 1897.
- E. E. Gifford, Old Stage Road, post office, Racine; number of cows, 28; condition of stock, good; stables, very clean; utensils, very clean; feed, hay, corn and oats, cut feed and corn stalks; well water. Very clean dairy. Inspected November 12, 1897.
- Isaac Mann, Franksville post office; number of cattle, 30; condition of stock, good; stables, clean; utensils, clean; feed, hay, cut feed, bran and corn; well water. A clean dairy. Inspected November 16, 1897.
- John J. Jones, post office, Racine; number of cows, 15; condition of stock, good; stables, clean; utensils, clean; feed, hay, corn and cut feed; well water. Clean dairy. Inspected November 16, 1897.
- E. E. Giddings, post office, Franksville; number of cows, 18; condition of stock, good; stables, clean; utensils, clean; feed, cut feed, hay, bran and meal; well water. Very clean dairy. Inspected November 16, 1897.
- John M. Roberts, Franksville post office; number of cows, 50; condition of stock, good; stables, clean, whitewashed; utensils, clean; feed, hay, bran, cut feed and barley sprouts; well water. Clean dairy. Inspected November 16, 1897.
- Jackson I. Case, post office, Racine; number of cows, 20; condition of stock, very good; stables, clean; utensils, clean; feed, hay, bran and corn stalks; well water. Fine herd of Jerseys. Inspected November 17, 1897.
- John Streweller, post office, Racine; number of cows, 11; condition of stock, good; stables, clean; utensils, clean; feed, hay, cut feed, bran and ground feed; well water. Good stable. Inspected November 17, 1897.
- Wm. H. Uelrick, Racine post office; number of cows, 12; condition of stock, good; stables, fair; utensils, clean; feed, corn stalks, hay, bran and cut feed; well water. Inspected November 17, 1897.
- N. P. Hansen, Racine post office; number of cows, 5; condition of stock, good; stables, clean; utensils, clean; feed, hay, corn stalks and bran; well water. Inspected November 17, 1897.
- C. P. Hansen, Racine post office; number of cows, 10; condition of stock, good; stables, clean; utensils, clean; feed, hay, corn stalks and cut feed; well water. Inspected November 17, 1897.

- F. Johnson, Racine post office; number of cows, 13; condition of stock, good; stables, clean; whitewashed; utensils, clean; feed, hay, corn meal, bran and corn stalks; well water. Inspected November 17, 1897.
- C. C. Beebe, Racine post office; number of cows, 35; condition of stock, very good; stables, clean; utensils, clean; feed, hay, corn and bran; well water. Excellent dairy. Inspected November 17, 1898.
- Olaf Winglav, Plank Road, post office, Racine; number of cows, 17; condition of stock, good; stables, clean; utensils, clean; feed, hay, cut feed, corn meal and bran; well water. Inspected November 18, 1897.
- J. W. Pearce, Plank Road, Racine post office; number of cows, 4; condition of stock, good; stables, fair; utensils, clean; feed, cut feed, hay and corn; well water. Inspected November 17, 1897.
- M. Sewell, Plank Road, post office, Racine; number of cows, 40; condition of stock, good; stables, clean, whitewashed; utensils, clean; feed, oat meal, corn and cut feed; well water. Very good dairy. Inspected November 18, 1897.
- Griffith Bros., Mount Pleasant, post office, Racine; number of cows, 49; condition of stock, good; stables, clean; feed, hay, cut feed and corn; well water. Very good dairy. Inspected November 18, 1897.
- C. Nelson, Plank Road, Racine post office, number of cows, 12; condition of stock, good; stables, clean; utensils, clean; feed, hay, cut feed, bran, oats and corn; well water. Inspected November 18, 1897.
- H. Newman, Mount Pleasant, Racine post office; number of cows, 35; condition of stock, very good; stables, clean, whitewashed; utensils, clean; feed, oats, corn meal and cut feed; well water. Excellent dairy. Inspected November 18, 1897.
- W. H. Lewis, Plank Road, Racine post office; number of cows, 12; condition of stock, good; stables, very good; utensils, clean; feed, hay, cut feed, corn and bran; well water. Inspected November 18, 1897.
- I. Rutez, Old Rapids Road, post office, Racine; number of cows, 8; condition of stock, good; stables, clean, whitewashed; utensils, clean; feed, hay, bran and cut feed; well water. An excellent dairy. Inspected November 19, 1897.
- Rassmusson Bros., Caledonia, post office, Racine; number of cows, 8; condition of stock, good; stables, fair; utensils, clean; feed, oats, corn, cut feed and hay; well water. Inspected November 19, 1897.
- Henry Peehn, Caledonia, post office, Racine; number of cows, 26; condition of stock, good; stables, very good; utensils, clean; feed, oats and corn, cut feed and hay; well water. An excellent dairy. Inspected November 19, 1897.
- I. Blessinger, Caledonia, post office, Racine; number of cows, 4; condition of stock, good; stables, clean; utensils, clean; feed, corn stalks, beets and hay; well water. Inspected November 19, 1897.
- John Fiest, Caledonia, post office, Racine; number of cows, 5; condition of stock, good; stables, good; utensils, clean; feed, hay, corn and cut feed; well water. Inspected November 19, 1897.
- Geo. P. Herchen, Old Rapids Road, post office, Racine; number of cows, 12; condition of stock, good; stables, not clean; utensils, clean; feed, hay and corn; well water. Notified to clean stables at once. Inspected November 19, 1897.
- Wm. Loose, 30th St., Milwaukee, near C., M. & St. P. tracks; number of cows, 7; condition of stock, dirty; stables, dirty; utensils, 2 cans, not very clean; feed, distillery slops, hay, bran and corn; well water. Ventilation poor; a dirty place. Inspected January 5, 1898.
- A. Sahr, 30th St., near C., M. & St. P. tracks, Milwaukee; number of cows, 11; condition of stock, dirty; condition of stables, dirty; utensils, 2 cans, clean; feed, distillery slops, middlings and hay; well water. Ventilation poor. Inspected January 5, 1898.
- Aug. Pritzloff, 947 20th St., Milwaukee; number of cows, 5; condition of stock, dirty; bedding, shavings; stables; fair; utensils, clean; feed, brewers' grains, middlings, vinegar slops, claimed for cows for own use; well and city water. Fair ventilation. Inspected January 5, 1898.

- Aug. Iahuke, 895 20th St., Milwaukee; number of cows, 11; condition of stock, clean; stables, clean; utensils, clean; feed, brewers' grains (sweet), barley sweet, barley malt sprouts, middlings and bran; well water. Good ventilation. Inspected January 5, 1898.
- Albert Erdman, 925 20th St.; number of cows, 4 (1 cow calving); condition of stock, not clean; stables, dirty; feed, brewers' grains; city water. No one on premises. Inspected January 5, 1898.
- Aug. Erdman, 944 20th St., Milwaukee; number of cows, 7; condition of stock, fairly clean, hay bedding; stables, fair; utensils, clean. Feed, hay, brewers' grains, corn, ground feed, distillery slops occasionally; city water. Ventilation good. Inspected January 5, 1898.
- R. Goerke, 1154 18th St., Milwaukee; number of cows, 9; condition of stock, not clean; stables, fairly clean, bedding, shavings; utensils, clean (2 cans used); feed, corn meal, brewers' grains, hay and corn stalks; city water. Ventilation sufficient. Inspected January 5, 1898.
- Henry Goerke, 1180 18th St., Milwaukee; number of cows, 6; condition of stock, not clean; stables, clean, no bedding; utensils, clean; feed, middlings, hay and brewers' grains; city water. Ventilation sufficient; does not peddle by wagon; only to those who call for milk; makes butter. Inspected January 5, 1898.
- H. Blank, 1915 Brown St., Milwaukee; number of cows, 14; condition of stock, fairly clean; stables, very good; utensils, clean; feed, brewers' grains, ground feed, middlings and hay; city water. Doesn't peddle by wagon; customers call; ventilated; cows cleanest so far found. Inspected January 6, 1898.
- E. Schmidt, 2113 Walnut St., Milwaukee; number of cows, 9; condition of stock, not clean; stables, fair; utensils, clean (2 cans); feed, middlings, ground feed, brewers' grains and hay; well water. Ventilation sufficient. Inspected January 6, 1898.
- John Schmechel, 2522 Vliet St., Milwaukee; number of cows, 7; condition of stock, not clean; stables, fairly clean; utensils (2 cans), clean; feed, brewers' grains, distillery slops, middlings, ground feed and hay; city water. Three small windows; ventilating shaft small. Inspected January 6, 1898.
- Mrs. Sachert, 2530 Vliet St., Milwaukee; number of cows, 4; condition of stock, not clean; feed; middlings, hay, brewers' grains and hay; well water. Ventilation poor; going out of business. Inspected January 6, 1898.
- Paul Engleman, 2401 Brown St., Milwaukee; number of cows, 6; condition of stock, fair; stables, fair; utensils, clean; feed, hay, brewers' grains and ground feed; well water. Ventilation sufficient. Inspected January 6, 1898.
- Adolph Foes, 1334 Humboldt Av., Milwaukee; number of cows, 10; condition of stock, not clean; stables, fair, straw bedding; utensils, (2 cans), clean, delivers to calling customers, peddles one can; feed, brewers' grains, middlings and hay; well water. Ventilation sufficient. Inspected January 6, 1898.
- H. Voss, 920 Richard St., Milwaukee; number of cows, 8; condition of stock, not clean; stables, not clean; utensils, clean; feed, brewers' grains, hay and middlings; city water. People call for milk; ventilated. Inspected January 6, 1898.
- Martin Unter, 1439 Humboldt Ave., Milwaukee; number of cows, 6; condition of stock, not clean; stables, fairly clean, leaves for bedding; utensils, 2 cans; feed, brewers' grains, hay, middlings and ground feed; water from large pond. Ventilation poor. Inspected January 6, 1898.
- Frank Wolschek, 1189 Weil St., Milwaukee; number of cows, 9; condition of stock, not clean; stables, not very clean; utensils, 2 cans daily; feed, middlings, hay and brewers' grains; well water. Ventilation poor. Inspected January 6, 1898.
- I. Richard, 2220 Lloyd St., Milwaukee; number of cows, 5; condition of stock, not clean; stables, fair; feed, brewers' grains, hay and middlings; city water. Ventilated. Inspected January 7, 1898.
- John Lench, 1450 10th St., Milwaukee; number of cows, 16; condition of stock, clean, neat; stables, clean; bedding, shavings; utensils (5 cans), clean; feed, brewers' grains, middlings and some oat meal; city and well water.

- Well ventilated; whitewashed walls; a good clean dairy; an exception so far. Inspected January 7, 1898.
- Fred Dobbgeheil, 1054 9th St., Milwaukee; number of cows, 3; condition of stock, not clean; stables, not clean; feed, brewers' grains, hay and middlings; well water. Ventilated; customers call for milk. Inspected January 7, 1898.
- Jos. Kunaske, corner Weil and Chambers Sts., Milwaukee; number of cows, 3; condition of stock, not clean; stables, fairly clean, bedding; utensils, cans not present; feed, brewers' grains, hay and middlings; well water. Ventilation, one small opening, 10x10; customers call for milk. Inspected January 7, 1898.
- August Endas, corner Chambers St. and Island Ave., Milwaukee; number of cows, 8; condition of stock, not clean; stables, not clean; utensils, cans out; feed, brewers' grains, hay and middlings; well water. Ventilated. Inspected January 7, 1898.
- Thos. Lyons, 921 Sobreske St., Milwaukee; number of cows, 24; condition of stock, not clean; stables, not very clean; feed, brewers' grains, bran, middlings and cut feed; city and well water. Whitewashed walls and ceilings; ventilated. Inspected January 7, 1898.
- Carl Warrod, 1311 Louis Ave., Milwaukee; number of cows, 4; condition of stock, not clean; stables; fairly clean; feed, brewers' grains, distillery slops and hay; well water. Ventilated. Inspected January 8, 1898.
- A. Shenper, 1185 24th St., Milwaukee; number of cows, 8; condition of stock, not clean; stables, not clean; utensils, two; feed, brewers' grains, middlings and hay; well water. Ventilated. Inspected January 8, 1898.
- August Dreblow, 1220 Washington Ave., Milwaukee; number of cows, 12; condition of stock, not clean; feed, brewers' grains, middlings, cut feed and hay; well water. Ventilated. Inspected January 8, 1898.
- H. Brown, 1209 25th St., Milwaukee; number of cows, 3; condition of stock, not clean; stables, fairly clean; feed, brewers' grains and hay; well water. Ventilated by one window. Inspected January 8, 1898.
- Louis Radman, 735 22d St., Milwaukee; number of cows, 6; condition of stock, clean; stables, clean; utensils, clean; feed, brewers' grains, middlings and distillery slops; city water. Ventilation sufficient. Inspected January 8, 1898.
- John Bergman, 786 22d St., Milwaukee; number of cows, 6; condition of stock, clean; stables, clean; utensils, clean; feed, brewers' grains, middlings, hay, corn and distillery slops; well water. Ventilation sufficient. Inspected January 8, 1898.
- C. Bast, 1022 25th St., Milwaukee; number of cows, 11; condition of stock, very dirty; stables, fairly clean; utensils, clean; feed, distillery slops, brewers' grains and hay; well water. Ventilated. Inspected January 10, 1898.
- H. Lucknous, 1239 Buffham St., Milwaukee; number of cows, 8; condition of stock, not clean, no bedding; stables, not clean; utensils, clean; feed, brewers' grains, hay and corn meal; well water. Ventilated. Inspected January 10, 1898.
- H. Rogge, 547 24½ St., Milwaukee; number of cows, 8; condition of stock, O. K.; stables O. K. Sold cows this day and goes out of business. Inspected January 10, 1898.
- I. Wenlopske, 946 Pulaski St., Milwaukee; number of cows, 3; condition of stock, not clean; stables, not clean; feed, brewers' grains, hay and middlings; city water. Ventilated. Inspected January 11, 1898.
- Aug. Holst, 299 Bellevue Place, Milwaukee; number of cows, 7; condition of stock, not clean; stables, fair; feed, brewers' grains, hay and middlings. Poor ventilation. Inspected January 11, 1898.
- A. Hildebrandt, 333 Pulaski St., Milwaukee; number of cows, 4; condition of stock, not as clean as should be; stables, fair; utensils, clean; feed, brewers' grains, middlings and hay; city water. Ventilated. Inspected January 11, 1898.
- Mrs. L. Secons, 1109 North Water St., Milwaukee; number of cows, 3; condition of stock, fairly clean; stables, fairly clean; utensils, clean; feed, brewers' grains, hay and middlings; city water. Ventilated. Inspected January 11, 1898.

- W. Janskeshi, 493 Bartlett St., Milwaukee; number of cows, 6; condition of stock, fairly clean; stables, quite clean; feed, brewers' grains, middlings and hay; city water. Ventilated. Does not peddle by wagon. Inspected January 11, 1898.
- Martin Koleski, 1150 Bremer St., Milwaukee; number of cows, 12; condition of stock, not clean; stables, not very clean; utensils, clean; feed, brewers' grains, middlings and hay; city water. Ventilated. Inspected January 11, 1898.
- Jas. Korpala, 749 5th Ave., Milwaukee; number of cows, 7; condition of stock, fairly clean; stables, fairly clean; utensils, clean; feed, brewers' grains, hay and middlings; well water. Ventilated. Inspected January 12, 1898.
- A. Dreves, 710 8th Ave., Milwaukee; number of cows, 15; condition of stock, not clean; stables, fairly clean; utensils (2 cans), clean, people also call for milk; feed, brewers' grains, middlings and hay; well water. Whitewashed ceiling and walls; ventilated. Inspected January 12, 1898.
- Jas. Turbach, 737 6th Ave., Milwaukee; number of cows, 9; condition of stock, not clean; stables, fair; feed, brewers' grains, middlings and hay; city water. Ventilated. Inspected January 12, 1898.
- Anton Korzenske, 1005 11th Ave., Milwaukee; number of cows, 3; condition of stock, fairly clean; stables, clean; utensils, clean; feed, brewers' grains, middlings, hay and corn meal; well water. Ventilated. Inspected January 13, 1898.
- John Pleske, 911 10th Ave., Milwaukee; number of cows, 8; condition of stock, clean; stables, clean; utensils, clean; feed, brewers' grains, middlings, corn meal and hay; well water. Ventilated. Inspected January 13, 1898.
- Wm. Schweder, 670 12th Ave., Milwaukee; number of cows, 9; condition of stock, 4 clean, 5 not clean; stables, fair; utensils, clean; feed, brewers' grains, middlings and hay; well water. Ventilated by windows. Inspected January 13, 1898.
- C. Rebatski, 897 10th Ave., Milwaukee; number of cows, 6; condition of stock, fair; stables, clean; feed, brewers' grains, middlings, distillery slops and hay; well water. Ventilated. Inspected January 13, 1898.
- M. Bahrend, 722 13th Ave., Milwaukee; number of cows, 2; condition of stock, clean; stables, clean; utensils, clean; feed, brewers' grains, middlings and hay; well water. Ventilated. Inspected January 13, 1898.
- John Mekowske, 822 Lincoln Ave., Milwaukee; number of cows, 11; condition of stock, quite clean; stables, clean; utensils, clean; feed, brewers' grains, middlings and hay; well water. Ventilated. Inspected January 13, 1898.
- John Yojaka, 673 Grove St., Milwaukee; number of cows, 13; condition of stock, clean; stables, clean; utensils, clean; feed, brewers' grains, middlings and hay; well water. Ventilated. Inspected January 13, 1898.
- John Wiescha, 511 Maple St., Milwaukee; number of cows, 7; condition of stock, not clean; stables, not clean; feed, brewers' grains, middlings and hay; well water. Ventilated. Inspected January 13, 1898.
- Anton Woski, 709 4th Ave., Milwaukee; number of cows, 3; condition of stock, not clean; feed, brewers' grains, middlings and hay; well water. Not ventilated. Inspected January 13, 1898.
- C. Schultze, 479 17th Ave., Milwaukee; number of cows, 5; condition of stock, not clean; stables not clean; feed, brewers' grains, distillery slops, middlings and hay; well water. Ventilated. Inspected January 14, 1898.
- C. Raster, corner Oklahoma and Clement Aves., Milwaukee; number of cows, 65; condition of stock, fairly clean; stables, fairly clean; utensils, clean; feed, brewers' grains, distillery slops, middlings and hay; well water. Ventilated. Inspected January 15, 1898.
- I. Welchsteck, 985 Pratt St., Milwaukee; number of cows, 2; condition of stock, not clean; stables, not clean; feed, brewers' grains, distillery slops, middlings and hay; well water. Ventilated. Inspected January 14, 1898.
- W. Kevanke, 626 Greenbush St., Milwaukee; number of cows, 2; condition of stock, clean; stables, clean; utensils, clean; feed, brewers' grains, middlings and hay; well water. Ventilated. Inspected January 15, 1898.

- M. Kuyana, 513 Maple St., Milwaukee; number of cows, 3; condition of stock, fairly clean; stables, fairly clean; utensils, clean; feed, distillery slops, brewers' grains, middlings and hay; well water. Ventilated. Inspected January 15, 1898.
- I. Limpki, 634 Grove St., Milwaukee; number of cows, 4; condition of stock, fairly clean; stables, fairly clean; utensils, clean; feed, distillery slops, brewers' grains, corn, middlings and hay; well water. Ventilated. Inspected January 15, 1898.
- P. Hoyeck, 638 6th Ave., Milwaukee; number of cows, 5; condition of stock, clean; stables, clean; utensils, clean; feed, brewers' grains, middlings and hay; well water. Ventilated. Inspected January 15, 1898.
- Thomas Baleski, 733 13th Ave., Milwaukee; number of cows, 2; condition of stock, fairly clean; stables, fairly clean; feed, distillery slop, brewers' grains and middlings; well water. Ventilated. Boy said: "Don't give cows any water." Inspected January 15, 1898.
- Fred Liefert, corner Forest Home and 13th Aves., Milwaukee; number of cows, 7; condition of stock, not very clean; stables, not very clean; utensils, clean; feed, brewers' grains, distillery slops (on Saturdays), middlings and hay; well water. Ventilated. Inspected January 15, 1898.
- I. Rozenski, 612 Greenbush St., Milwaukee; number of cows, 2; condition of stock, clean; stables, clean; utensils, clean; feed, brewers' grains, middlings and hay; well water. Ventilated. Inspected January 15, 1898.
- Milwaukee Nursing Milk Establishment, N. Shil & Co., Oakland Ave., post office box 209, Milwaukee; number of cows, 35; condition of stock, excellent; stables, clean; utensils, clean; feed, corn meal, corn and oats ground, cut fodder and hay; well water. Well conducted dairy. Inspected January 17, 1898.
- Julius Voelz, 700 Oakland Ave., Milwaukee; number of cows, 25; condition of stock, fairly clean; stables, and old stable, not well ventilated; utensils, clean; feed, middlings, barley, chaff and hay; well and river water. Some cows cleaned and some not. Inspected January 17, 1898.
- C. Tenier, 447 Bishop St., Milwaukee; number of cows, 1; condition of stock, not clean; stables, not clean; feed, hay and middlings; well water. Inspected January 17, 1898.
- P. Justin, 640 Superior St., Milwaukee; number of cows, 4; condition of stock, fairly clean; stables, fairly clean; feed, hay, middlings and cut fodder; well water. Going out of business. Inspected January 17, 1898.
- I. Krause, 414 20th Avenue, Milwaukee; 1 cow, condition of stock, not clean; stables, fair; feed, brewers' grains and middlings; well water. Ventilated. Inspected January 18, 1898.
- Michael Kujawa, 1007 Garden St., Milwaukee; number of cows, 5; condition of stock, not clean; stables, not clean; utensils, clean; feed, brewers' grains, middlings and hay; well water. Ventilated. Inspected January 18, 1898.
- A. Ostrowsik, 887 Franklin St., Milwaukee; number of cows, 3; condition of stock, two clean, one not clean; stables, not clean; feed, brewers' grains, middlings and hay; well water. Ventilation poor. Inspected January 18, 1898.
- A. Ceilowski, 746 19th Ave., Milwaukee; number of cows, 3; condition of stock, not very clean; stables, fair; utensils, clean; feed, brewers' grains, middlings and hay; well water. Ventilated by windows; going out of business in April. Inspected January 18, 1898.
- Loren Cyeska, 1104 8th Ave., Milwaukee; number of cows, 6; condition of stock, not clean; stables, not clean; utensils, clean; feed, brewers' grains, middlings and hay; well water. Ventilation poor. Inspected January 18, 1898.
- W. Mathews and Julius Mathews, corner Burleigh and 27th Sts., Milwaukee; number of cows, 24; condition of stock, not clean; condition of stables, fair; utensils, not present; feed, distillery slops, brewers' grains, hay and cut feed; well water. Ventilated. "Don't clean cattle; nobody does." "Don't water them." Inspected January 19, 1898.
- Gotlieb Goll, 774 21st St., Milwaukee; number of cows, 5; condition of stock, very dirty; stables, very dirty; utensils, not seen; feed, distillery slops,

- brewers' grains; city water. Ventilation poor. Nobody at home when I called. Inspected January 19, 1898.
- Jas. Keller, Hopkins Ave., outside city limits, Milwaukee; number of cows, 32; condition of stock, not clean; stables, clean, bedding; utensils, clean; feed, middlings, hay and cut fodder; well water. Ventilated by windows. "Don't clean cows." Inspected January 19, 1898.
- W. Rungee, 426 19th St., Milwaukee; number of cows, 2; condition of stock, clean; stables, clean; utensils, clean; feed, middlings and hay; city water. Ventilated. Inspected January 19, 1898.
- C. Engleman, 1332 Fond du Lac Ave., Milwaukee; number of cows, 3 (2 sold January 21); condition of stock, fairly clean; condition of stables, fair; feed, middlings and hay; city water. Ventilated. Inspected January 21, 1898.
- E. Tesch, 1141 24th St., Milwaukee; number of cows, 4; condition of stock, not clean, dirty; stables, not clean; feed, brewers' grains, middlings and hay; well water. Ventilation poor. Inspected January 21, 1898.
- C. Arndt, 1028 24½ St., Milwaukee; number of cows, 2; condition of stock, not clean (dirty); stables, not clean; feed, middlings and hay; well water. Ventilation poor. Inspected January 21, 1898.
- E. Muchleoder, 1151 21st St., Milwaukee; number of cows, 10; condition of stock, fairly clean; stables, fair; utensils, clean; feed, brewers' grains, hay and distillery slops; city water. Ventilated. Inspected January 22, 1898.
- Frank Sapanske, 1201 Weil St., Milwaukee; number of cows, 3; condition of stock, not clean; stables, not clean; feed, distillery slops, middlings and hay; well water. Ventilation poor. Inspected January 22, 1898.
- John Lovinska, 1148 Bremen St., Milwaukee; number of cows, 3; condition of stock, fair; stables, fair; utensils, clean; feed, brewers' grains, middlings and hay; city and well water. Ventilated. Inspected January 22, 1898.
- Aug. Menski, 1211 Bremen St., Milwaukee; number of cows, 2; condition of stock, not clean; stables, not clean; feed, distillery slops, middlings and hay; well water. Ventilated. Inspected January 22, 1898.
- II. Krazoska, 1136 Bremen St., Milwaukee; number of cows, 8; condition of stock, not clean; stables, not clean; utensils, clean; feed, brewers' grains, middlings, hay and distillery slops; city water. Ventilated. Inspected January 22, 1898.
- G. Loopnow, 1014 North Pierce St., Milwaukee; number of cows, 3; condition of stock, fairly clean; stables, fairly clean; utensils, clean; feed, brewers' grains, middlings, hay and distillery slops (small quantity); city water. Well ventilated. Inspected January 22, 1898.
- Thos. Lyons, 921 Sobeske St., Milwaukee; number of cows, 24; condition of stock, not clean; stables, not very clean; feed, brewers' grains, bran, middlings, cut corn stalks; city water. Whitewashed walls and ceilings; cleaner than first visit, with A. S. Mitchell, state chemist. Inspected (second visit) January 25, 1898.
- A. Helberstadt, 333 Pulaski St., Milwaukee; number of cows, 4; condition of stock, not as clean as should be; stables, fair; feed, brewery grains, middlings and hay; city water. Ventilated. With A. S. Mitchell, state chemist. Inspected (second visit) January 25, 1898.
- A. Sahr, 30th St., Milwaukee; number of cows, 11; condition of stock, dirty; stable, dirty; utensils, not seen; feed, distillery slops, middlings and hay; well water. Ventilation poor. Boy said, didn't give water only in slops and feed; 2 barrels each day and a half of slops. Inspected (second visit) February 2, 1898.
- Wm. Loose, 30th St., Milwaukee; number of cows, 7; condition of stock, dirty; stables, dirty; utensils, not seen; feed, distillery slops, hay, bran and corn; well water. Dirty place; ventilation poor; 2 barrels slops per week. Give water only in slops and feed. Inspected (second visit) February 2, 1898.
- Gottlieb Gall, 774 21st St., Milwaukee; number of cows, 5; condition of stock, dirty; 1 cow apparently not well; stables, dirty; feed, distillery slops, brewers' grains and hay; city water. Ventilation poor. Inspected (second visit) February 2, 1898.

- W. Mathews, corner Burleigh and 27th Sts., Milwaukee; number of cows, 22; condition of stock, not clean; stables, fair; feed, distillery slops, brewers' grains, hay and cut feed; well water. Ventilated. "Don't give water to cows," only that given in slops; two or three loads of slops per week; wagon holds seven barrels. Inspected (second visit) February 2, 1898.
- C. Bast, 1022 25th St., Milwaukee; number of cows, 9; condition of stock, dirty; stables, fairly clean; feed, distillery slops, brewers' grains and hay; well water. Two barrels distillery slops per week. Ventilated. Inspected (second visit) February 2, 1898.
- Aug. Treblow, 1220 27th St., Milwaukee; number of cows, 11; condition of stock, not clean; stables, not clean; feed, brewer's grains, middlings, barley sprouts and hay; well water. Ventilated. Better than first visit. Inspected (second visit) February 2, 1898.
- Frank Sopanski, 1201 Weil St., Milwaukee; number of cows, 3; condition of stock, clean; stables, clean; utensils, not seen; feed, distillery slops, middlings and hay; well water. Ventilation poor. Cows and stable cleaned up since inspected January 22, 1898. Inspected (second visit) March 11, 1898.
- Frank Wolschek, 1189 Weil St., Milwaukee; number of cows, 7; condition of stock, fairly clean; stables, not as clean as should be, floor wet, no bedding; utensils, not seen; feed, middlings, brewers' grains and distillery slops; well water. Ventilation poor. Much better appearance than when inspected January 8, 1898. Inspected (second visit) March 11, 1898.
- John Lenck, 1450 10th St., Milwaukee; number of cows, 16; condition of stock, clean, fine stock; stables, clean, bedding; utensils, 5 cans, clean; feed, brewers' grains, middlings, some oat meal; city and well water. Whitewashed walls; ventilation good. A neat dairy. Inspected (second visit) March 11, 1898.
- Aug. Holst, 299 Bellvue St., Milwaukee; number of cows, 6; condition of stock, fairly clean, bedding; stables, fairly clean; utensils, not seen, doesn't deliver milk by wagon; feed, brewers' grains, clover hay and middlings; river and well water. Great improvement in looks of cattle since inspected January 11, 1898. Inspected (second visit) March 11, 1898.
- Martin Koleski, 1150 Bremen St., Milwaukee; number of cows, 12; condition of stock, clean; stables, fairly clean; utensils, not seen; feed, brewers' grains, middlings and hay; city water. Cows and stable in better shape than when inspected January 11, 1898; quite an improvement shown. Inspected (second visit) March 11, 1898.
- Th. Krazoska, 1136 Bremen St., Milwaukee; number of cows, 10; condition of stock, clean; stables, clean; utensils, not seen; feed, brewers' grains, middlings, distillery slops and hay; city water. Very much improved since inspected January 22, 1898. Inspected (second visit) March 11, 1898.
- Thos. Lyons, 921 Sobeski St., Milwaukee; number of cows, 22; condition of stock, not clean; stables, not very clean; utensils, not seen; feed, brewers' grains, bran, middlings and cut corn stalks; city and well water. Walls whitewashed, but need a new coat. Cobwebs on ceilings. Ventilated. Not greatly improved since former visits. Yard dirty. Inspected March 11, 1898.
- August Gudes, 148 Chambers St., corner Chambers St. and Island Ave., Milwaukee; number of cows, 9; condition of stock, very dirty; utensils, not seen; stables, forward part stalls clean, with some bedding, rear dirty; utensils, not seen; feed, brewers' grains, hay and middlings; well water. No improvement since inspected January 7, 1898. Cows to be tested by Dr. Clute; one cow could hardly stand. Inspected (second visit) March 11, 1898.
- C. Bast, 1022 25th St., Milwaukee; number of cows, 11; condition of stock, dirty, one cow lousy, 1 condemned by Dr. Clute; stables, dirty; utensils, not seen; feed, distillery slops, brewers' grains, hay and middlings; well water. Ventilation poor. Dr. Clute ordered cow quarantined by Board of Health. Conditions worse than on January 10, 1898, and February 2, 1898. Inspected (third visit) March 12, 1898.
- Julius Voltz, 700 Oakland Ave., Milwaukee; number of cows, 25; condition of stock, clean; stables, clean, old buildings; utensils, not seen; feed, middlings, barley chaff and brewers' grains; well and river water. Great improvement

- since inspected January 17. Wall and ceilings lately whitewashed. Inspected (second visit) March 11, 1898.
- A. Dreves, 710 8th Ave., Milwaukee; number of cows, 15; condition of stock, clean; stables, fair, bedding, shavings; utensils, clean; feed, brewers' grains, middlings and hay; city water. Whitewashed walls. Ventilated. Improved since visit of January 12, 1898. Inspected (second visit) March 12, 1898.
- Leon Cijeska, 1104 8th Ave., Milwaukee; number of cows, 6; condition of stock, not clean; stables, not clean; utensils, clean; feed, brewers' grains, middlings and hay; well water. Ventilation not good; sour smell in barn. Better condition than on January 18, 1898. Inspected (second visit) March 12, 1898.
- C. Raster, corner Oklahoma and Clement Aves., Milwaukee; number of cows, 6; condition of stock, fairly clean; stable, fairly clean; utensils, clean; good milkhouse; feed, brewers' grains, distillery slops, middlings and hay; well water. Main part of barn ventilated; shed with nine cows not ventilated. Better condition than since visit of January 14, 1898. Inspected (second visit) March 12, 1898.
- Wm. Matheus, corner Burleigh and 27th Sts., Milwaukee; number of cows, 24; condition of stock, not clean; stables, fair, no bedding, floors damp; utensils, not seen; feed, distillery slops, brewers' grains and cut feed; well water. Ventilation not sufficient; ceilings very low; barn an old one. Give no water. Inspected (third visit) March 12, 1898.
- Albert Erdman, 925 20th St., Milwaukee; number of cows, 4; condition of stock, fairly clean; utensils, not seen; feed, brewers' grains, hay middlings; city water. Ventilated. Since inspection of January 5, 1898, appearance of stock and stable improved. Inspected (second visit) March 24, 1898.
- Henry Goerke, 1180 20th St., Milwaukee; number of cows, 6; condition of stock, clean; condition of stables, clean; utensils, clean; feed, middlings, hay, brewers' grains; city water. Ventilated. No peddling by wagon. Improved since inspection January 5, 1898. Inspected (second visit) March 24, 1898.
- R. Goerke, 1154 18th St., Milwaukee; number of cows, 9; condition of stock, clean; condition of stables, fairly clean; bedding, shavings; utensils, clean; feed, corn meal, brewers' grains, corn stalks, hay; city water. Ventilation fair. Improved since January 5, 1898. Inspected (second visit) March 24, 1898.
- E. Muehlender, 1151 21st St., Milwaukee; number of cows, 10; condition of stock, clean; condition of stables, clean; utensils, clean; feed, brewers' grains, hay, distillery slops; city water. General appearance much improved since January 21st, 1898. Inspected (second visit) March 24, 1898.
- August Jahnke, 895 20th St., Milwaukee; number of cows, 11; condition of stock, clean; condition of stables, clean; bedding, shavings; utensils, clean; feed, brewers' grains, barley sprouts, middlings, bran, hay; well water. Good ventilation. Inspected January 5, 1898. Inspected (second visit) March 24, 1898.
- August Pritzloff, 927 20th St., Milwaukee; number of cows, 5; condition of stock, 3 clean, 2 dirty; condition of stables, clean; bedding, shavings; utensils, clean; feed, brewers' grains, vinegar slops, middlings; well and city water. Fair ventilation. Since inspected on January 5, 1898, there has been a slight improvement. Inspected (second visit) March 24, 1898.
- Aug. Erdman, 944 20th St., Milwaukee; number of cows, 8; condition of stock, clean; condition of stables, clean, bedding; utensils, not seen; feed, hay, brewers' grains, corn, ground feed, distillery slops; city and well water. Ventilation good. Since inspected on January 5, 1898, the general appearance has been better. Inspected (second visit) March 24, 1898.
- II. Voss, 920 Richards St., Milwaukee; number of cows, 8; condition of stock, 7 clean, 1 lousy; condition of stables, clean; utensils, clean; feed, brewers' grains, hay, middlings, hay; city water. Ventilated. Is doctoring lousy cow. Has had her but 2 weeks. Appearance of stock and stable greatly improved since January 6, 1898. Inspected (second visit) March 26, 1898.
- John Bergman, 786 22d St., Milwaukee; number of cows, 6; condition of stock, clean; condition of stables, clean; utensils, clean; feed, brewers' grains, middlings, hay, corn, distillery slops; well water. Ventilated. Better appear-

- ance generally than January 8, 1898. Inspected (second visit) March 26, 1898.
- Louis Radman, 735 22d St., Milwaukee; number of cows, 6; condition of stock, clean; condition of stables, clean; utensils, clean; feed, brewers' grains, middlings, distillery slops, hay; city water. Ventilated. Quite good January 8, 1898, but better now. Inspected (second visit) March 26, 1898.
- John Schmachel, 2522 Vliet St., Milwaukee; number of cows, 7; condition of stock, clean; condition of stables, clean; utensils, clean; feed, brewers' grains, middlings, ground feed, hay, distillery slops; city water. Ventilation not good. Much improved since visit of January 6, 1898. Inspected (second visit) March 26, 1898.
- Mrs. F. Siefert, corner Forest Home and 13th Ave., Milwaukee; number of cows, 8; condition of stock, not clean; condition of stables, not clean, drainage poor, ordered to raise floor by Board of Health; utensils, clean; feed, brewers' grains, some distillery slops, middlings, hay; well water. Ventilated. Going out of business; "too much trouble with officers." Inspected (second visit) March 25, 1898.
- Herman Schwab, 1053 20th St., Milwaukee; number of cows, 5; condition of stock, cows very dirty; condition of stables, not clean, drainage poor, some bedding; utensils, not seen; feed, brewers' grains, hay, corn meal, cut feed; well water. Ventilation poor. Milk license should be taken from Schwab. Inspected March 25, 1898.
- E. Schmidt, 2713 Walnut St., Milwaukee; number of cows, 7; condition of stock, clean; condition of stables, clean; utensils, clean; feed, middlings, ground feed, brewers' grains, hay; well water. Ventilated. Improved since January 6, 1898. Inspected (second visit) March 26, 1898.
- Mrs. Seachert, 2530 Vliet St., Milwaukee; number of cows, 4; condition of stock, clean; condition of stables, clean; utensils, clean; feed, middlings, hay, brewers' grains; well water. Ventilation not good. Stock and stable improved since January 6, 1898. Inspected (second visit) March 26, 1898.
- John Mekaski, 822 Lincoln Ave., Milwaukee; number of cows, 11; condition of stock, clean; condition of stables, clean; utensils, clean; feed, brewers' grains, middlings, hay; well water. Ventilated. Quite a clean dairy. Inspected January 13, 1898. Inspected (second visit) March 28, 1898.
- Jas. Tierback, 737 6th Ave., Milwaukee; number of cows, 9; condition of stock, clean; condition of stables, clean; utensils, clean; feed, brewers' grains, middlings, hay; city water. Ventilated. Much improved since inspection of January 12, 1898. Inspected (second visit) March 28, 1898.
- John Pleske, 911 10th Ave., Milwaukee; number of cows, 8; condition of stock, clean; condition of stables, clean; utensils, clean; feed, brewers' grains, middlings, corn meal, hay; well water. Ventilation good. Very clean and stock well taken care of. Inspected January 13, 1898. Inspected (second visit) March 28, 1898.
- C. Rebsteke, 897 10th Ave., Milwaukee; number of cows, 8; condition of stock, clean; condition of stables, clean; utensils, clean; feed, brewers' grains, middlings, distillery slops, hay; well water. Ventilated. Quite a neat dairy. Improved since visit on January 13, 1898. Inspected (second visit) March 28, 1898.
- Wm. Schroeder, 670 12th Ave., Milwaukee; number of cows, 9; condition of stock, clean; condition of stables, clean; utensils, 1 can clean; feed brewers' grains, middlings, hay; well water. Ventilation fair. Much improved since inspection on January 13, 1898. Inspected (second visit) March 28, 1898.
- Fred Arndt, 1513 Teutonia St., Milwaukee; number of cows, 9; condition of stock, fairly clean; condition of stables, quite clean; utensils, not seen; feed, brewers' grains, middlings, hay; well water. Ventilated. Quite clean. Inspected (first visit) March 29, 1898.
- A. Shenper, 1185 24th St., Milwaukee; number of cows, 9; condition of stock, not clean; condition of stables, not clean; utensils, not seen; feed, brewers' grains, oats and barley, hay; well water. Fair ventilation. But slight improvement since January 8, 1898. Inspected (second visit) March 29, 1898.
- H. Werner, 1801 Keefe Ave. (extreme north), Milwaukee; number of cows, 8;

- condition of stock, not clean; condition of stables, not clean; utensils, not seen; feed, brewers' grains, distillery slops, middlings, hay; well water. Old barn, drainage poor. Inspected (first visit) March 29, 1898.
- H. Lucknow, 1239 Buffham St., Milwaukee; number of cows, 8; condition of stock, clean; condition of stables, clean; utensils, clean; feed, brewers' grains, hay, corn; well water. Ventilated. Great improvement since January 10, 1898. Inspected (second visit) March 31, 1898.
- Adolph Siede, 45th and Lisbon road, Milwaukee; number of cows, 9; condition of stock, dirty; condition of stables, not clean; utensils, not seen; feed, brewers' grains, middlings, hay; well water. Poorly ventilated. Inspected April 1, 1898.
- Vincent Snyder, North Avenue road, Milwaukee; number of cows, 3; condition of stock, clean, good; condition of stables, fairly clean; utensils, not seen; feed, brewers' grains, middlings, hay; well water. Ventilated. Fair condition. Inspected April 1st, 1898.
- John Hopfer, corner Elm and 44th Sts. (outside limits), Milwaukee; number of cows, 9; condition of stock, good and clean; condition of stables, clean, bedding; utensils, clean; feed, brewers' grains, middlings, hay; well water. Quite good. Inspected April 1st, 1898.
- Anton Gourski, 709 4th Ave., Milwaukee; number of cows, 3; condition of stock, clean; condition of stables, clean; utensils, not seen; feed, brewers' grains, middlings, hay; well water. Ventilation poor. Clean dairy. Inspected (first visit) April 1st, 1898.
- John Wiescha, 511 Maple St., Milwaukee; number of cows, 7; condition of stock, fairly clean; condition of stables, fairly clean; utensils, not seen; feed, brewers' grains, middlings, hay; well water. Ventilated. Some improvement since January 13, 1898. Inspected (second visit) April 1st, 1898.
- John Yajaka, 673 Grove St., Milwaukee; number of cows, 13; condition of stock, clean; condition of stables, fairly clean; utensils, not seen; feed, brewers' grains, middlings, hay; well water. Ventilated. Drainage not what it should be. Some better than when inspected on January 13, 1898. Inspected (second visit) April 1st, 1898.
- P. Hoyeck, 638 6th Ave., Milwaukee; number of cows, 5; condition of stock, clean; condition of stables, clean; utensils, clean; feed, brewers' grains, middlings, hay; well water. Ventilated. Quite clean. Better than when inspected on January 15, 1898. Inspected (second visit) April 1st, 1898.
- Mrs. C. Schultz, 479 17th Ave., Milwaukee; number of cows, 5; condition of stock, not clean; condition of stables, not clean; utensils, not seen; feed, brewery grains, distillery slops, middlings, hay; well water. One cow apparently not well and so informed Mrs. Schultz, and requested that cow be examined by veterinary surgeon. Inspected (second visit) April 1st, 1898.
- Paul Engleman, 2401 Brown St., Milwaukee; number of cows, 7; condition of stock, clean; condition of stables, clean; utensils, not seen; feed, brewers' grain, hay, bran; well and city water. Ventilated. Better than when inspected on January 6, 1898. Inspected (second visit) April 2, 1898.
- H. Blank, 1915 Brown St., Milwaukee; number of cows, 7; condition of stock, clean; condition of stables, clean; utensils, not seen; feed, brewers' grains, ground feed, middlings, hay; city water. Ventilated. Inspected January 6, 1898. Inspected (second visit) April 2, 1898.
- J. Richard, 2220 Lloyd St., Milwaukee; number of cows, 5; condition of stock, clean; condition of stables, clean; utensils, not seen; feed, brewers' grains, hay, middlings; city water. Ventilated. Much better than when inspected on January 7, 1898. Inspected (second visit) April 2, 1898.
- J. Siecakwitz, 18 Auer Ave., Milwaukee; number of cows, 8; condition of stock, fairly clean; condition of stables, fairly clean; utensils, clean; feed, brewers' grains, middlings, hay; well water. Ventilation poor. Inspected (first visit) April 4, 1898.
- Adolph Foas, 1334 Humbolt Ave., Milwaukee; number of cows, 10; condition of stock, clean; condition of stables, clean, bedding; utensils, not seen; feed, brewers' grains, middlings, hay; well water. Ventilated. Improved since January 6, 1898. Inspected (second visit) April 4, 1898.

- Martin Foas, 1439 Humbolt Ave., Milwaukee; number of cows, 6; condition of stock, clean; condition of stables, clean, bedding; utensils, not seen; feed, hay, middlings, ground feed; pond (large) water. Ventilation poor. Improved since January 6, 1898. Inspected (second visit) April 4, 1898.
- P. Kemmling, Fond du Lac road, Milwaukee; number of cows, 13; condition of stock, good, clean; condition of stables, clean; utensils, clean; feed, brewers' grains, middlings, hay, corn stalks; well water. Ventilated. Inspected April 7, 1898.
- Fred Leechfoos, Fond du Lac road (36th St.), Milwaukee; number of cows, 2; condition of stock, dirty; condition of stables, not clean; utensils, not seen; feed, brewers' grains, corn stalks, middlings, hay; well water. Ventilated. Inspected April 7th, 1898.
- Gustave Kahn, Fond du Lac road (37th St.), Milwaukee; number of cows, 3; condition of stock, good, clean; condition of stables, clean, bedding; utensils, clean; feed, brewers' grains, corn stalks, middlings, hay; well water. Good ventilation. Inspected (second visit) April 7, 1898.
- A. Kurth, Fond du Lac road (north toll gate), Milwaukee; number of cows, 25; condition of stock, good, fairly clean; condition of stables, fairly clean; utensils, clean; feed, brewers' grains, middlings, hay; well water. Ventilation good. Inspected April 7, 1898.
- A. J. Painter, Fond du Lac road, Milwaukee; number of cows, 32; condition of stock, good, clean; condition of stables, clean; utensils, clean; feed, brewers' grains, corn feed, clover hay; well water. A good, clean dairy. Inspected (second visit) April 7th, 1898.
- Fred Mepo, Sercomb road, Milwaukee; number of cows, 7; condition of stock, all good but 1 (that one lousy), others clean; condition of stables, fairly clean; utensils, not seen; feed, brewers' grains, hay, middlings; well water. Ventilated. Inspected April 7, 1898.
- Frank Trenz, Sercomb road, Milwaukee; number of cows, 26; condition of stock, good, clean; condition of stables, clean; utensils, clean; feed, brewers' grains, middlings, hay; well water. Ventilation good. Inspected April 7, 1898.
- Louis Trenz, Sercomb road, Milwaukee; number of cows, 22; condition of stock, good, clean; condition of stables, fairly clean; utensils, clean; feed, brewers' grains, middlings, hay; well water. Ventilated. Inspected April 7, 1898.
- L. Dittman, Sercomb road, Milwaukee; number of cows, 11; condition of stock, good, clean; condition of stables, clean; utensils, clean; feed, brewers' grains, middlings, hay, corn stalks; well water. Ventilated. Inspected April 7, 1898.
- Thos. Lyons, 921 Sobeeski St., Milwaukee; number of cows, 21; condition of stock, not clean; condition of stables, not clean, no bedding; utensils, not seen; feed, brewers' grains, bran, middlings, cut corn stalks; city and well water. No improvement since March 11, 1898. Inspected (fourth visit) April 8, 1898.
- Thos. Krzoska, 1136 Bremen St., Milwaukee; number of cows, 10; condition of stock, quite clean; condition of stables, cleaner than March 11, 1898; utensils, not seen; feed, brewers' grains, middlings, hay, distillery slops; city water. Quite an improvement since January 22, 1898. Inspected (third visit) April 8, 1898.
- Martin Kaleski, 1150 Bremen St., Milwaukee; number of cows, 12; condition of stock, fairly clean; condition of stables, fairly clean; utensils, not seen; feed, brewers' grains, middlings, hay; city water. Better than January 11, 1898. Inspected (third visit) April 8, 1898.
- Frank Wolschek, 1189 Weil St., Milwaukee; number of cows, 7; condition of stock, quite clean; condition of stables, fairly clean, no bedding; utensils, not seen; feed, brewers' grains, middlings, distillery slops; well water. Ventilation poor. Great improvement since January 8, 1898. Inspected (third visit) April 8, 1898.
- John Leuck, 1450 10th St., Milwaukee; number of cows, 16; condition of stock, clean, fine stock; condition of stables, clean, bedding; utensils, 5 cans, clean; feed, brewers' grains, middlings, some oat meal; city and well water. White-washed walls. The cleanest dairy in the city of Milwaukee. Inspected (third visit) April 8, 1898.

- W. Mathews, corner Burleigh and 29th Sts., Milwaukee; number of cows, 22; condition of stock, fairly clean; condition of stables, fairly clean; utensils, not seen; feed, distillery slops, cut feed, middlings, hay; well water. Ventilation good, floors dry. Much improved since inspection. Inspected (fourth visit) April 11, 1898.
- L. Uecker, Kilbourn road, Town of Lake, Milwaukee; number of cows, 20, condition of stock, fairly clean; condition of stables, fairly clean; utensils, clean; feed, brewers' grains, middlings, hay, cut corn stalks, distillery slops; well water. Ventilation good. Inspected April 11, 1898.
- A. Doeblow, 1220 Washington Ave., Milwaukee; number of cows, 12; condition of stock, fairly clean, 1 cow with lumpy jaw; condition of stables, fairly clean; utensils, not seen; feed, brewers' grains, middlings, hay; well water. Notified Board of Health to quarantine one cow with bad case of lumpy jaw. Not using milk from this cow. Inspected (third visit) April 11, 1898.
- Wm. Slaetley, Kilbourn road, Town of Lake, Milwaukee; number of cows, 11; condition of stock, good, fairly clean; condition of stables, fairly clean; utensils, not seen; feed, brewers' grains, middlings, hay, corn stalks; well water. Quite fair stable. Inspected April 11, 1898.
- Gus. Mathews, Kilbourn road, Town of Lake, Milwaukee; number of cows, 17; condition of stock, fairly good and clean; condition of stables, clean; utensils, clean; feed, brewers' grains, distillery slops, hay, middlings; well water. Ventilation good. Inspected April 11, 1898.
- Joseph L. Thiede, Kilbourn road, Town of Lake, Milwaukee; number of cows, 19; condition of stock, fairly clean; condition of stables, fairly clean; utensils, not seen; feed, brewers' grains, hay, middlings, corn stalks; well water. Fairly good ventilation. Inspected April 11, 1898.
- Henry Lodde, Kilbourn road, Town of Lake, Milwaukee; number of cows, 24; condition of stock, fairly clean; condition of stables, fairly clean; utensils, not seen; feed, brewers' grains, middlings, hay; well water. First refused admission to stable, but gave way on threatened arrest. Inspected April 11, 1898.
- C. Schultz, 479 17th Ave., Milwaukee; number of cows, 5; condition of stock, 1 sick; condition of stables, clean, recently whitewashed; utensils, not seen. Dr. Leech to test this herd for tuberculosis on Monday, April 18, 1898. Inspected (with Dr. Leech) April 14, 1898.
- A. Doeblow, 1220 Washington Ave., Milwaukee; number of cows, 12; condition of stock, 1 with lumpy jaw; condition of stables, fair; utensils, not seen. Dr. Clute to order the cow with lumpy jaw disposed of. Killed April 16, 1898. Inspected (with Dr. Clute) April 14, 1898.
- C. Raster, cor. Oklahoma and Clement Aves., Milwaukee; number of cows, 64; condition of stock, fair; condition of stables, fair, bedding; utensils, clean; feed, distillery slops, brewers' grains, hay and middlings; well water. Better than last visit with Dr. Clute. Inspected (fourth visit) April 15, 1898.
- Fred. Zweifel, Hopkins road, Milwaukee; number of cows, 31; condition of stock, good; condition of stables, very fair, bedding; utensils, clean; feed, brewers' grains, hay, middlings, corn stalks cut; well water. Much better than January 19, 1898. Formerly owned by J. Keller. Inspected (second visit) April 20, 1898.
- Jacob Kords, Kilbourn road, Town of Lake, Milwaukee; number of cows, 40; condition of cows, clean, except 2; condition of stables, very good, bedding; utensils, clean; feed, distillery slops, hay, middlings; well water. Plenty of ventilation. Inspected April 21, 1898.
- John C. Miller, Town of Lake, 8th Ave., Milwaukee; number of cows, 8; condition of stock, not clean; condition of stables, not clean; utensils, not seen; feed, distillery slops, middlings, hay; well water. Will soon go to pasture. Inspected April 21, 1898.
- Adolph Gruether, Town of Lake, 8th Ave. (new road), Milwaukee; number of cows, 50; condition of stock, good; condition of stables, very good, fine barn; utensils, clean; feed, brewers' grains, middlings, hay, cut feed; well water. Good dairy. Inspected April 21, 1898.

- Henry Schroucke, Town of Lake, 8th Ave., Milwaukee; number of cows, 3; condition of stock, not clean; condition of stables, fairly clean, bedding; utensils, not seen; feed, distillery slops, middlings, corn stalks, hay; well water. Inspected April 21, 1898.
- H. Grunewald, Kilbourn road, Town of Lake, Milwaukee; number of cows, 15; condition of stock, fairly clean; condition of stables, fairly clean; utensils, not seen; feed, brewers' grains, middlings, hay; well water. Ventilation good. Inspected April 21, 1898.
- Spleuter Bros., Hawley road, Wauwatosa; number of cows, 29; condition of stock, good, clean; condition of stables, clean, bedding; utensils, clean; feed, brewers' grains, middlings, hay; well water. Good ventilation. Inspected April 29, 1898.
- Christian Pries, Root Creek, Hawley road, Greenfield; number of cows, 18; condition of stock, very good, clean; condition of stables, clean, bedding; utensils, clean; feed, brewers' grains, hay, middlings, cut feed; well water. Clean dairy. Inspected April 29, 1898.
- Wm. Stellok, Root Creek, Hawley road, Greenfield; number of cows, 27; condition of stock, very good, clean; condition of stables, clean, bedding; feed, brewers' grains, hay, middlings, cut feed; well water. Clean dairy. Inspected April 29, 1898.
- Adam Notle, Root Creek, Hawley road, Greenfield; number of cows, 28; condition of stock, very good, clean; condition of stables, clean, bedding; utensils, clean; feed, brewers' grains, middlings, hay, cut feed; well water. Excellent dairy. Inspected April 29, 1898.
- C. L. Dana, North Greenfield; number of cows, 30; condition of stock, good; condition of stables, good. Samples of milk taken by A. S. Mitchell and self at Camp Harvey. Freezine found in milk-house, also in samples of milk. Arrested C. L. Dana, May 16, 1898. Pleaded guilty before Justice McClintock, Wauwatosa, May 17, 1898. Fined \$25.00 and costs, \$4.25. Inspected May 10th, 1898.
- H. Meyer, Highland, near county line, Racine Co.; number of cows, 15; condition of stock, 1 cow sick with tuberculosis; condition of stables, clean; feed, pasture. Registered cow No. 33, Patton. Notified Dr. Clute, state veterinary surgeon. Cow died July 20, 1898. Inspected July 17, 1898.
- Boyd & West, Waukesha, Wis.; number of cows, 18; condition of stock, not examined; utensils, clean; feed, cows in pasture; well water. Found prevaline in box in milk-house. Complaint sworn out October 14, 1898. Inspected September 26, 1898.
- Jos. Liss, 1149 Bremen St., Milwaukee; number of cows, 7; condition of stock, 4 clean, 3 dirty; condition of stables, not clean; utensils, not seen; feed, distillery slops, brewers' grains and middlings; city water. Inspected March 9, 1899.
- Morris Knaak, 79 Keefe Ave., Milwaukee; number of cows, 7; condition of stock, fairly clean; condition of stables, not very clean; utensils, clean; feed, distillery slops, hay and middlings; well water. Small stable. Inspected March 9, 1899.
- I. Braunkski, 1215 Weil St., Milwaukee; number of cows, 4; condition of stock, unclean; condition of stables, unclean; utensils, not seen; feed, distillery slops, middlings and hay; city water. Photograph taken. Inspected March 8, 1899.
- F. Wolschack, 1189 Weil St., Milwaukee; number of cows, 8; condition of stock, unclean; condition of stables, unclean; utensils, not seen; feed, distillery slops, middlings and hay; city water. Photograph taken, 2:30 p. m. Inspected March 8, 1899.
- I. Scerakowicz, 965 Weil St., Milwaukee; number of cows, 5; condition of stock, dirty; condition of stables, dirty; utensils, not seen; feed, distillery slops, middlings and brewers' grains; city water. Unclean place; photograph taken, 3:20 p. m. Inspected March 8, 1898.
- Frank Gulske, 899 Falney St., Milwaukee; number of cows, 4; condition of stock, very dirty; condition of stables, very dirty; utensils, not seen; feed, distillery slops and middlings; city water. A dirty dairy. Inspected March 8, 1898.

- John Zdrojewski, 936 Bremen St., Milwaukee; number of cows, 5; condition of stock, filthy; condition of stables, very unclean; utensils, not seen; feed, distillery slops, middlings and hay; city water. Dirty place. Inspected March 8, 1899.
- F. Slopanski, 1201 Weil St., Milwaukee; number of cows, 4; condition of stock, unclean; condition of stables, unclean; utensils, not seen; feed, distillery slops and middlings; city water. Photograph taken, 3 p. m. Inspected March 8, 1899.
- L. Klamann, 916 Dousman St., Milwaukee; number of cows, 5; condition of stock, dirty; condition of stables, dirty; feed, distillery slops, middlings and hay; city water. Inspected March 8, 1899.
- Aug. Juedes, 154 Chambers St., Milwaukee; number of cows, 10; condition of stock, in fair condition, all clean but 2; condition of stables, quite clean; utensils, not seen; feed, brewers' grains, hay and middlings; city water. Ventilated. Inspected March 9, 1899.
- Stanislaus Zaworski, 1315 Booth St., number of cows, 3; condition of stock, 2 dirty, 1 clean; condition of stables, not clean; utensils, not seen; feed, distillery slops, brewers' grains and hay; water, well in cellar, has been condemned. Inspected March 9, 1899.
- Martin Kaleski, 1150 Bremen St., Milwaukee; number of cows, 12; condition of stock, fairly clean; condition of stables, not very clean; utensils, not seen; feed, brewers' grains, distillery slops, middlings and hay; city water. Ventilated. Inspected March 8, 1899.
- John Lavinski, 1148 Bremen St., number of cows, 13; condition of stock, fairly clean; condition of stables, fair; utensils, clean; feed, brewers' grains, distillery slops, middlings and hay; city and well water. Ventilated. Inspected March 8, 1899.
- Herman Voss, 920 Richards St., Milwaukee; number of cows, 10; condition of stock, fairly clean, all but 3; condition of stables, fairly clean; utensils, clean; feed, brewers' grains, middlings and hay; city water. Inspected March 8, 1899.
- Chas. Dohmer, Oakland Ave., Milwaukee; number of cows, 4; condition of stock, clean; condition of stables, clean; utensils, clean; feed, middlings, cut fodder and hay; well water. Inspected February 28, 1899.
- Mrs. Dohmen, Oakland Ave., Milwaukee; number of cows, 4; condition of stock, clean; condition of stables, clean; utensils, clean; feed, middlings, cut fodder and hay; well water. Inspected February 28, 1899.
- N. Schmit & Co., nursing milk dairy, Oakland Ave., Milwaukee; number of cows, 8; condition of stock, very good; condition of stables, clean; feed, middlings, corn, cut fodder. Twenty-five cows belonging to this herd taken on February 20th to Granville, Wis. The 8 left will be sold to butchers. Inspected February 28, 1899.
- C. Best, 1022 25th St., Milwaukee; number of cows, 8; condition of stock, very fair; condition of stables, clean, bedding; utensils, clean; feed, distillery slops, brewers' grains, middlings and hay; city water. Much better than on March 12, 1898. Inspected February 27, 1899.
- A. Shenper, 1185 24th St., Milwaukee; number of cows, 9; condition of stock, very dirty, manure on hips and belly; condition of stables, dirty; utensils, not seen; feed, brewers' grains, middlings and hay; city water. Sickness prevented proper care; so informed by proprietor. No improvement since March 29, 1898. Drainage poor. Inspected February 27, 1899.

LIST OF CREAMERIES AND CHEESE FACTORIES IN WISCONSIN, 1898.

Creameries.....	951
Cheese Factories	1,571
Total number of creameries and factories....	2,522

CHEESE FACTORIES.

Post-Office.

ADAMS COUNTY—

Davis Corners Cheese and Butter Co.....	Little Rock
Friendship Cheese Factory.....	Friendship
G. W. Fletcher.....	Grand Marsh
L. C. Cristenson	Big Flats
C. J. Foot	Oxford
J. J. Zwicky	Point Bluff
N. H. Westman	Spring Creek

BARRON COUNTY—

Gratton Dairy Co.....	Gratton
Pecose Bros. Cheese Factory.....	Dallas

BROWN COUNTY—

H. F. Meyer	Greenleaf
John Conrad	Poland
D. Benecke	Fontenoy
F. Wittig	Fontenoy
A. C. Arndt	Fontenoy
New Denmark Farmers' Co-op. Ass'n.....	Fontenoy
P. Lyons	Fontenoy
East Wrightstown Cheese Factory.....	East Wrightstown
Anton Naughtaway	Glenmore
William Polk	Glenmore
Tel. Charlier	Schiller
Henry Naughtaway & Co.....	Pine Grove
Ph. Falch	Shirley
F. H. Lange	Pine Grove
H. Buchaus	Askeaton
F. C. Saenger	Lark
H. S. Beyer	Denmark
Theo. Vanroy	Lodgeville
A. T. Saenger	Lodgeville
Dan. Falck	Morrison
Excelsior Cheese Factory	Morrison
Maurice Brennan	Morrison
Louis Falck	Morrison
Borchardt Bros.	Wayside
Chas. F. Mason	Suamico

BROWN COUNTY—Continued.

Wisconsin Butter & Cheese Co.....	Wrightstown
Frank Huyters	Wrightstown
Victor Soetch	New Franken
Silver Van Drew	New Franken
Botis Orlas	New Franken
Mike Brunner	New Franken
Lewis Goodchild	Mills Center
J. H. Osterloh.....	Henrysville
John Conrad	Henrysville
Albert Uecker	Kunesh
J. R. Meyers	Forks
Geo. Drexler	Holland
Jacob Reistacker	Midway

BUFFALO COUNTY—

Mondovi Creamery and Cheese Co.....	Mondovi
Seyforth Bros.	Mondovi
Cochrane Cheese Co.	Cochrane
Brinkham & Tasson Cheese Co.....	Cochrane
Rohrer Bros.	Cochrane
Mill Creek Cheese Factory.....	Alma
Belvidere Cheese Factory	Alma
John Eberle Cheese Factory	Alma
Pine Creek Cheese Factory	Alma
Tell Creek Cheese Factory	Alma
August J. Herold Cheese Factory.....	Herold
Eberle & Moser Cheese Factory.....	Gilmanton
Farmers' Cheese Factory	Gilmanton
A. R. Pierce Cheese Factory	Gilmanton
Rudolph Pfund Cheese Factory	Gilmanton
Ierman Schultz Cheese Factory	Gilmanton
Henry Deerkop Cheese Factory	Gilmanton
John Jost Cheese Factory	Gilmanton
Levi Deets Cheese Factory	Gilmanton
Trout Creek Cheese Factory	Tell
Lookout Cheese Factory	Lookout

CALUMET COUNTY—

Peter Schumacker & Co.....	Jericho
John Actor	Jericho
Nic. Orth	Darboy
John Snyder	Brant
Heckert & Albert	Chilton
John R. McCabe	Chilton
J. & D. Ryan	Chilton
H. A. Albes	Chilton
E. C. Pingel	Chilton
Jake Kalb	Chilton
John Piper	Chilton
John P. Weins	Chilton
T. J. Harder	Chilton
John Minard	Chilton
Chas. Birk	Chilton
Pat McCole	Brant
Maedke & Junker	Brillion
J. B. Junker	Brillion
Wm. Lintner	Brillion
Chas. Feuestenberg	Brillion
Jos. Wolfmeyer	Brillion
Kasson Creamery	Brillion
Dundas Butter & Cheese Factory.....	Dundas
Mrs. Theo. Runte	Hibbert

CALUMET COUNTY—Continued.

L. P. Schumacker	Hibbert
J. A. Hienke	Hibbert
August Brandes	Hibbert
Phillip Reis	Hibbert
John A. Horst	Hayton
Wm. Lintner	Forest Junction
John Wolfmeyer	Forest Junction
Fred. Lindow	Forest Junction
Henry Schley	Forest Junction
Otto Freud	Gravesville
J. P. Wems	Chilton
F. W. Riedel	Potter
Herman Voight	Potter
Wm. Becker	Potter
F. W. Biedel	Potter
Peter Meyer	New Holstein
Wendel Burg	New Holstein
Math. Kraemer	Charlesburg
Reis & Maddler	St. John
J. J. Holzschut	Sherwood
Carl Medenwold	Brillion
John Amken	Brillion
Philip Meyer	Brillion
Henry Achter	Brothertown
Phillip Kies	Lake Park
Joe. Bodine	Lake Park
Christ. Hargard	Lake Park
John Heiner	Stockbridge
Fred. Bauer	St. John
John W. Bruker	St. John
John Holshue	St. John

CHIPPewa COUNTY—

S. E. Cass	Anson
A. Butscher	Boyd
F. L. Monroe	Cadott
Snyder Bros.	Cook's Valley
H. G. St. Louis	Cook's Valley
John Bates	Eagle Point
Albertville Butter and Cheese Co.	Albertville
Kelley & Cass	Liddell
Snyder Bros.	Bloomer
H. D. Cummings	Bloomer
Fagen Bros.	Stanley

CLARK COUNTY—

Ira Somerfeld	Colby
Steinwand Cheese Co.	Colby
L. A. Hirsh	Lynn
Otto Decker	Hemlock
Henry Jacobi	Abbotsford
S. R. Davis	Granton
Farmers' Cheese Co.	Dorchester
Distelhorst & Co.	Dorchester
Dorchester Cheese Co.	Dorchester
Sherman Dairy Co.	Veeckind
Delamater & Palms	Greenwood
Herman Laabs	Green Grove
S. D. Gibson	Wilcox
Holzhauser Cheese Factory	Reseburg
H. F. Thiel	Snow
Joseph Frame	Unity

COLUMBIA COUNTY—

Chivers & Kuse.....	Columbus
G. W. Scott.....	Columbus
E. E. Brigham.....	Columbus
Lodi Creamery Co.....	Lodi
Simons & Hutson.....	Lodi
M. W. Spear.....	Wyocena
Wyocena Cheese Factory.....	Wyocena
A. J. Baker.....	Thurman
L. H. Dates.....	Thurman
H. R. Moldenhauer & Bro.....	Cambria
F. Grossman.....	Lewiston
Port Hope Butter and Cheese Association.....	Port Hope
John Woolsey.....	Lewiston
Fred. Manthy.....	Pacific
R. J. Russell.....	Portage City
Gust. Schurber.....	Randolph Center

CRAWFORD COUNTY—

Coldsprings Cheese Co.....	Millett
B. Opprecht.....	Seneca
Kingsbury & Patterson.....	Prairie du Chien
Gay's Mills Creamery Co.....	Gay's Mills

DANE COUNTY—

Myrland & Co.....	Primrose
G. S. Enger & Co.....	Primrose
C. England & Co.....	Primrose
Holland & Co.....	Primrose
Wallen & Co.....	Primrose
Standard Cheese Co.....	Primrose
Lyle Cheese Factory.....	Lyle
Thomas Kundred.....	Lyle
Connor Co.....	Lyle
Basco Cheese Factory Association.....	Basco
Montrose Cheese Factory Association.....	Montrose
Primrose Cheese Factory Association.....	Montrose
Sand Hill Cheese Factory.....	Forward
Engen Cheese Factory.....	Forward
Perry Center Cheese Factory.....	Forward
Pleasant Valley Cheese Factory.....	Forward
Perry Southern Cheese Factory.....	Elvers
Kelliher Cheese Factory.....	Elvers
M. Michelson Cheese Factory.....	Elvers
P. Lynch Cheese Factory.....	Elvers
Stucky Bros.....	Elvers
Sunnyside Cheese Factory.....	Perry
Perry Cheese Factory.....	Perry
North Perry Cheese Factory.....	Perry
Indian Hill Cheese Factory.....	Perry
Spring Valley Cheese Factory.....	Spring
Allengrove Cheese Factory.....	Grit
Central Cheese Factory.....	Paoli
Old Mount Horeb Cheese Factory.....	Mount Horeb
Swanson Cheese Factory.....	Mount Horeb
Bangs.....	Mount Horeb
German Valley.....	Mount Horeb
Erbey.....	Mount Horeb
Diamond Cheese Factory.....	Black Earth
Vernon Cheese Factory.....	Black Earth
Schied Cheese Factory.....	Blue Mounds
Barber Cheese Co.....	Blue Mounds
South Blue Mounds.....	Blue Mounds
C. Zwicky.....	Belleville

DANE COUNTY—Continued.

J. Voegley	Belleville
H. Klasse	Belleville
E. Schaller	Verona
Town Hall Factory	Mount Vernon
Fasher Factory	Mount Vernon
Connor Factory	Mount Vernon
Beaver Creek Cheese Co.	Arnsburg
Basco Cheese Co.	Basco

DODGE COUNTY—

Town Line Dairy Association	Lowell
Indian Garden Cheese Factory	Richwood
Shields Butter and Cheese Co.	Richwood
Home Cheese Factory	Richwood
Baeler Bros.	Randolph
Orth Bros.	Rolling Prairie
Second Ward Cheese Factory	Mayville
Maple Grove Cheese Factory	Mayville
Rock River Cheese Factory	Mayville
Northwestern Cheese Factory	Mayville
Koepsel Cheese Factory	Mayville
Fred. Baertschy Cheese Factory	Mayville
Portland Cheese and Butter Association	Reeseville
Leader Cheese and Butter Association	Reeseville
F. Sette (3)	Iron Ridge
H. Billgran (4)	Iron Ridge
Chas Henplein	Iron Ridge
Imobersteg Bros.	Knowles
Boehmer & Meyer Cheese and Creamery	Lomira
Jonely Bros. Cheese and Creamery	Lomira
Swartz & Hoffman Cheese and Creamery	Lomira
Jonely Bros. Cheese and Creamery	Brownsville
J. N. Wigginton	Fox Lake
Martin Huebelien	Fox Lake
Amel Dermel	Fox Lake
Herman Lefeld	Theresa
Michael Murphy	Neosha
Lime Ledge Cheese Factory	Neosha
Mike Fitzgerald (4)	Neosha
John Peters Cheese Factory	Neosha
John Ivey Cheese Factory	Hullsburg
F. O. Schujahn Cheese Factory	Hullsburg
Thomas Carmody Cheese Factory	Alderley
Amiel Kunzi Cheese Factory	Alderley
Amiel Winkelman Cheese Factory	Alderley
Ashippun Cheese Co.	Ashippun
North Star Cheese Co.	Ashippun
Cherry Hill Cheese Co.	Ashippun
Sugar Island Cheese Association	Ashippun
Lime Ledge Cheese Association	Ashippun
J. T. Peters	Woodland
Chris. Gassner	Woodland
Peter Peters	Woodland
Dukeschien Cheese Factory	Juneau
Shaw Creek Cheese Factory	Beaver Dam
Chrls. Kohli	Kekoskee
Thomas Cheese Factory	Beaver Dam
Emil Roll	Kekoskee
Rock Cheese Factory	Herman
Chas. Christian	Herman
Herman Koepsel, Jr.	Herman
Jos. Aufdermann	Herman

DODGE COUNTY—Continued.

Christian Indermuehl	Oak Grove
Westside Factory	Oak Grove
Oak Grove Village Factory.....	Oak Grove
Union Cheese Factory Co.....	Hustisford
Ryder Cheese Co.....	Hustisford
F. Thirlke & Co.....	Hustisford
White Oak Cheese Factory Co.....	Hustisford
August Kochler & Co.....	Hustisford
Gust. Garcke & Co.....	Hustisford
John Jossi	Hustisford
C. T. Nehls.....	Hustisford
Gottlieb Klossner	Hustisford
Max Radloff	Hustisford
J. F. Leitzke & Co.....	Hustisford
Wege & Co.....	Hustisford
J. E. Dornfeld.....	Hustisford
Ernest Bramer	Hustisford
Newton Cheese Factory	Hustisford
Rubicon River Factory.....	Hustisford
Walsh & Laffy (2).....	Clyman
P. Callaghan.....	Clyman
Clyman Center	Clyman
Orth Bros.	Juneau
S. Schneider	Juneau
Martin Volmar	Juneau
Union Cheese Factory.....	Juneau
Essmann Cheese Factory.....	Juneau
Essmann Cheese Factory.....	Juneau
Dukeschein Cheese Factory	Juneau
Prairie View Cheese Factory.....	Beaver Dam
Calamas Cheese Factory	Beaver Dam
Westford Cheese Factory	Beaver Dam
Lake Shore Inc. Cheese Factory.....	Beaver Dam
Rock River	Horicon
Gottlieb Gassner	Horicon
White Oak	Horicon
Brown's Corners	Horicon
Burnet German Swiss Cheese Factory.....	Horicon
Jacob Baehler	Minnesota Junction
H. R. Holdenbauer (5).....	Lebanon
E. Briesemeter	Lebanon
Jacob Jossi	Lebanon
Indermuhle Bros. (2).....	Le Roy
Charles Miller	Le Roy
Chris. Kohli, Sr.....	Le Roy
North Elba Cheese Factory.....	Danville
Northwest Cheese Factory	Danville
Chas. Reichow Factory	Rubicon

DOOR COUNTY—

R. F. Buchols	Forestville
August Busse.....	Forestville
Wm. Stoneman Bros. Co.....	Forestville
H. J. Teske.....	Carnot
Erskine & Lemine	Jacksonport
Weiterman & Vokes.....	Voseville
A. Weltse	Sister Bay
Wenzel Bunda.....	Sister Bay
A. Anderson	Ephraim
Torgor Torgerson	Bailey's Harbor
Albert Icke	Ellison Bay
Mathew Nygard	Vignes

DOOR COUNTY—Continued.

Chas. Jenquinne	Little Sturgeon
Jos. Neusse	Sturgeon Bay
Emil Limpert	Sturgeon Bay
F. A. Krueger.....	Sawyer
Alec. Pierre	Namur
Evrard Bros.	Namur
G. Guth & Son.....	Kolberg
Ernst Haegele	Kolberg
Herman Schussell	Kolberg
Pierre Verlee Co.....	Brussels
John Henquinet	Gardner
Madoche & McDermott.....	Solona
John Shugton	Stokes
William Stoneman	Stokes
Herman Nimus	Stokes
William Goetz	Stokes
Wm. Kraeger	Stokes
John Barrman	Maplewood
Wm. M. Goetz	Maplewood
Herman Ninice.....	Tornado
Conrad Guth	Stevenson's Pier
Chas. Bassford	Sevastopol
L. M. Washburn.....	Sevastopol
John W. Worachek	Egg Harbor
Chas. Jess & Co.....	Washington Harbor
B. J. Anderson.....	Detroit Harbor

DUNN COUNTY—

Downing Manufacturing Co. Cheese Factory.....	Downing
Rusk Co-op. Creamery Co.....	Rusk
L. E. Schuare	Red Cedar

EAU CLAIRE COUNTY—

Garfield Cheese Factory.....	Augusta
Seidel Bros.	Augusta
Star Butter and Cheese Factory.....	Augusta
Beaver Creek Co.....	Amesburg
Thomas Johnston	Boaz
F. J. Bender.....	Boaz
C. B. Cornwall	Boaz
C. W. Davis	Ithaca
Henry Schaup	Neptune
Maple Grove Factory.....	Viola
C. L. Stausburgh.....	Loyal
Hull Bros.	Viola
G. E. Miles	Twin Bluffs
Waddell & Flamme.....	Twin Bluffs
James Walden	Yuba or Hub City
C. B. Cornwall.....	Yuba
Westford Cheese Factory	Cazenovia
G. E. Miller.....	Sextonville
J. P. Fulmer	Byrd's Creek
Buck Horn Cheese Factory.....	Balmoral
Eagle Cheese Factory.....	Balmoral
Fred. Bender	Basswood
H. J. Noyes.....	Basswood
John Donner	Basswood
Charles Berritt	Tavera
Union Factory	Keyesville
Arnold Yenenbeck	Bear Valley
Frank Wertzell	Bear Valley
Frank Hessler	Eagle Corners
C. L. Jones	Eagle Corners

FOND DU LAC COUNTY—

Central Creamery Co.....	Farmer
Beaver Creek Cheese Factory.....	Armstrong
L. E. McFarlen	Armstrong
Mr. Rice	Armstrong
John Morgan	Armstrong
Bentley Van Blarcon.....	New Prospect
James Gilboy	Dundee
R. J. Romain	Dundee
Zwicky & Schmidt	Vandyne
Albert Schmidt	Vandyne
C. Pfeiffer & Son.....	Vandyne
C. Schiller	Vandyne
Aug. Hebener	New Fane
John Aupperle	New Fane
Behle Bros.	Calvary
Perrin Bros.	Mount Calvary
Mathias Wagner	Mount Calvary
Joseph Wagner	Mount Calvary
C. Heustegen	Mount Calvary
T. J. Kelley	Eden
Geo. Gorjde	Eden
N. P. Kellogg.....	Eden
P. O'Brien	Eden
H. F. Sacket.....	Waucoaster
C. Pieper & Sons.....	Waucoaster
Dennis Daley	Waucoaster
Behle Bros.....	Summit Station
J. W. Dillon.....	Dotyville
M. M. Dillon.....	Dotyville
Baldorf Carty Leonard and heirs.....	Dotyville
Woolfgram (W. W.).....	Dotyville
John Bast	Dotyville
E. A. Galloway	Dotyville
Simon Steffes	Wolf Lake
George Hinn	Banner
C. F. G. Wernicke	Banner
Bohlman	Banner
A. Leonard, Jr.....	Banner
Frank McKinney	Kirkwood
Leith Brothers	Kirkwood
Theodore Fick	New Cassel
John Krebsch	Johnsburg
Lewis Loehr	Johnsburg
Peter Weinliss	Johnsburg
Chas. Fleishmann	Elmore
John Welchlie	Elmore
Orth Bros.	Elmore
H. Pfenenger	Rosendale
Henry Sacket	Campbellsport
Peter Ammon	Brandon
Peter Stephany	Peebles
T. H. Koepka	Peebles
Peter Weinreis	Peebles
F. Goessling.....	St. Cloud
S. Steffes.....	St. Cloud
Henry Blonien.....	St. Cloud
John Kohlman.....	St. Cloud
C. M. Knowels.....	St. Cloud
Perrien Bros.....	Marytown
Michael Pikart	Malone
Matt Moersch	Calumet Harbor
M. J. Michaels	Calumet Harbor

FOND DU LAC COUNTY—Continued.

Farmers' Co.	Ladoga
Ennisson Bros.	Rogersville
Mrs. Brayton	Fond du Lac
Amel Warnkee	Fond du Lac
M. Michels Butter and Cheese Co.	Calumetville
Gulig Bros.	Calvary
Ennisson Bros.	Eldorado
H. Estabrooks	Fond du Lac
Jacob Stellabacker	Byron
Jonely	Byron
M. Fleischmann Cheese Co.	Saint Kellian
Feeber Bros.	New Prospect
E. Korb	Marytown
Jos. Statz	Lamartine
J. H. Quick	Lamartine
C. S. Nash	Lamartine
Bacont Roberts	Waupun
C. A. Atwood	Waupun
James Erwin	Waupun
L. A. Stratz	Woodhull

GRANT COUNTY—

Moore Bros.	Mentfort
Blake's Prairie Cheese Factory.	Glen Haven
Witcher's Cheese Factory	Platteville
Lima Cheese Factory	Platteville
Swiss Cheese Factory	Montfort
Oak Grove Factory	Montfort
Wm. Warne	Livingston
Platte Cheese Factory.	Stitzer
Ira W. Griswold	Stitzer
Jacob Regez	Annaton
Castle Rock Dairy Association	Castle Rock
Fennimore Branch Dairy Association.	Castle Rock
Wanek & Dieter Co.	Castle Rock
Marion Cheese Factory	Boscobel
Richwood Cheese Factory	Boscobel
Sander's Creek Cheese Factory	Boscobel
Oak Ridge Cheese Factory	Boscobel
Boscobel Factory	Boscobel
John Clemons	Cuba City
H. J. Noyes	Muscoda
Muscoda Butter and Cheese Association	Muscoda
Orth, Berau & Lampher	Muscoda
Oak Grove Cheese Factory.	Muscoda
Buckhorn Cheese Factory (Richland Co.)	Muscoda
Walnut Grove Cheese Factory.	Muscoda
Badge City Cheese Factory	Muscoda
Dimock Cheese Factory (Iowa Co.)	Muscoda
Star A Star Cheese Factory (Iowa Co.)	Muscoda
Carl Sohlman	Cassville
Homer Cheese Co.	Homer
A. R. Allen	Patch Grove

GREEN COUNTY—

Flanagan Cheese Factory	Farmer's Grove
Blumer & Co.	Farmer's Grove
Anton NyCrotten	Farmer's Grove
H. Wild	Farmer's Grove
John Barry	Farmer's Grove
Thos. Duerst	Farmer's Grove
Mrs. W. Monteith	Farmer's Grove

GREEN COUNTY—Continued.

M. S. Casey.....	Farmer's Grove
James Scott.....	Farmer's Grove
Pat McHugh.....	Farmer's Grove
Syver Moen.....	Farmer's Grove
John Conway.....	Farmer's Grove
Christ Bleiler.....	Farmer's Grove
Spring Valley Cheese Co.....	New Glarus
Kubley Bros.....	New Glarus
Poplar Grove Cheese Co.....	New Glarus
Zimmerman Cheese Manufacturing Co.....	New Glarus
Henry Aultman Cheese Co.....	New Glarus
New Glarus Cheese Manufacturing Co.....	New Glarus
Deurst Bros. Cheese Co.....	New Glarus
Conrad Babler.....	New Glarus
Ward Cheese Factory.....	New Glarus
Huster Cheese Co.....	New Glarus
Wm. Engler.....	New Glarus
J. N. Babler.....	New Glarus
J. L. Streussy.....	New Glarus
Matt. Elmer.....	New Glarus
Fred. Legler & Co.....	New Glarus
Paul Kundert.....	New Glarus
David Hefty.....	New Glarus
John Legler.....	New Glarus
Samuel Christian.....	New Glarus
Con. Staffacher.....	New Glarus
Pedee Cheese Factory.....	Pedee
James Alexander.....	Pedee
A. Pulman.....	Pedee
Farmers' Stock Co.....	Pedee
Zweifel Bros.....	Pedee
Herman Geise.....	Pedee
Jos. Mathers.....	Pedee
Jacob Kundert.....	Jordan
J. Voegeli.....	Jordan
Bottle Tollefson.....	Jordan
Abraham Staffacher.....	Jordan
Matt. Hoffmeister.....	Jordan
Baltz Schindler.....	Jordan
Jacob Greenwald.....	Jordan
C. L. Beyerhoffer.....	Jordan
Barbara Elmer.....	Jordan
Gibbon & Co.....	Jordan
Twin Grove Cheese Co.....	Twin Grove
J. M. Berry.....	Twin Grove
J. C. Ula & Co.....	Ula
York Center Cheese Factory.....	Ula
Saw Mill Cheese Factory.....	Ula
Hoosher's Grove Farmers' Co.....	Tyrone
Jacob Karlen.....	Cadiz
Mary A. Dinan.....	Cadiz
Henry Elmer.....	Cadiz
Geo. Lawrence.....	Cadiz
Fred Blum Cheese Co.....	Monticello
Rhimer & Clark.....	Monticello
D. Stauffacher.....	Monticello
Wittenwyler & Berry Cheese Co.....	Monticello
T. O. Silver.....	Monticello
Rudy Freitag.....	Monticello
Jacob Stauffer.....	Monticello
Martin Geigel.....	Monticello
J. & J. Marty.....	Monticello

GREEN COUNTY—Continued.

Wm. Heines	Monticello
M. Moser	Monticello
J. Stillter	Oakley
H. Dayer	Oakley
Farmers' Grove Cheese Factory	Stewart
Marks Hoesly	Stewart
Conrad E. Elmer	Stewart
Fred Kundert	Stewart
Ezra Wild	Stewart
Vinger	Stewart
Nyfrater	Stewart
Jacob Hoesley	Stewart
Jacob Blum	Stewart
Nels Nessa	Stewart
T. Hermonson	Stewart
Chris. Journeby	Stewart
Arne A. Barger	Stewart
Marianna Strahm	Stewart
Hans Emberson	Stewart
Henry Legler	Stewart
Anton Eldsmore	Stewart
G. F. Lehnherr	Dayton
Exeter Cheese Co.	Dayton
Ross Cheese Factory Co.	Dayton
Casper Zwickey	Dayton
Henry Klossy	Dayton
Matt Schmid	Dayton
Henry Freitag	Dayton
Gottlieb Lehnherr	Dayton
Jost Voegley	Dayton
Henry Rusti	Martintown
Clisey Factory	Martintown
William Lang	Martintown
Munger Factory	Brodhead
Centre Factory	Brodhead
Zweifel Bros.	Brodhead
August Crause	Brodhead
H. C. Atherton	Brodhead
August Zenlow	Brodhead
P. Wohlwend	Juda
Jos. Huber & Co.	Woodford
John Ruble	Clarno
F. Lichtenwaller	Clarno
Eugene White	Clarno
David Karlen	Clarno
Wm. Beckman, Sr.	Clarno
Wm. Timm	Clarno
Geo. Pfiffer	Clarno
Samuel Raymer	Clarno
Henry Kleckner	Clarno
Austin Davis	Clarno
David Haren	Clarno
Otis Schaffer	Clarno
Polk Cheese Factory	Polk
John Schultz	Polk
F. Grunert & Co.	Monroe
Jacob Regez	Monroe
Jacob Karlen & Son.	Monroe
John C. Wenger & Co.	Monroe
Chris. Stauffer	Monroe
John Boos	Monroe
Roth & Stauffacher	Monroe

GREEN COUNTY—Continued.

John A. Fraeser	Monroe
John G. Fraeser	Monroe
John Bantell	Monroe
Anton Tochtermann	Monroe
R. Benkert	Monroe
Joshua Klassy	Monroe
J. Speich	Albany
Fred Kundert	Albany
Stauffacher Bros.	Albany
Conrad Elmer	Albany
Fred Stauffacher	Alband
Chris. Elmer	Albany
Jacob Reiman	Albany
Fred Speich	Sylvester
Chris. Marti	Albany
Sylvester Cheese Factory	Sylvester
J. Speich	Sylvester
E. & J. Stauffacher	Sylvester
Peter Stauffacher	Sylvester
J. J. Stauffacher	Sylvester
M. W. Sylvester	Sylvester
Adam Luchsinger	Sylvester
James Martin	Sylvester
S. H. Haman	Sylvester
M. M. Hulbert	Sylvester
A. Edwards	Sylvester
David Mani	Browntown
John Leiderman	Browntown
Henry Johnson	Browntown
Jacob Templer	Browntown
Jos. Ackerman	Browntown
Daniel Keen	Juda
G. H. & W. A. Pengra	Juda
George Dawson	Juda
S. Hutzler	Juda
J. W. Blackford	Juda
F. F. Matzke	Juda
A. Preston	Juda
Davis	Juda
Frisbee	Juda
Wm. Matzke	Juda
John Deininger	Monroe
H. Babler	Monroe
E. South	Monroe
M. T. Gapen	Monroe
John Pfund	Monroe
Thieler Bros.	Monticello
Jas. Weismiller	Monticello
J. C. Marty (2)	Monticello
Karlen Bros.	Monticello
J. H. Theiler	Monticello
Fred. Blum, Jr.	Monticello
M. Beddingmeyer	Monticello
James Dolan	Monroe
M. Zumbunner	Monroe
G. Woeffler	Monroe
David Hefty	Monroe
John Benkert	Monroe
Andrew Harper	Monroe
John Wittenvogler	Monticello
Mel. Schlitter	Monticello
N. & H. Freitag	Monticello

GREEN COUNTY—Continued.

John Moritz	Monticello
G. Wittwer	Monticello
Warner Bloom	Monticello
John Becker	Monticello
Jos. Schwarzenberger	Brooklyn
S. Freitag	Brooklyn
Wm. Crouse, Sr.	Brooklyn

GREEN LAKE COUNTY—

J. J. Clark	Berlin
Town Line Cheese Factory	Berlin
Page Bros.	Berlin
Seneca Cheese Factory	Berlin
Black Creek Cheese Factory	St. Marie
Hunter Factory	Standart

IOWA COUNTY—

Big Springs	Union Mills
Union Mills Cheese Factory	Union Mills
Hollenbeck Cheese Co.	Clyde
Bigelow Cheese Factory	Clyde
Middlebury Cheese Co.	Middlebury
Theobald Cheese Co.	Middlebury
Adamsoller Cheese Co.	Middlebury
Jacob Urben	Middlebury
John Riker	Middlebury
Walter Thomas	Middlebury
John Ingold	Middlebury
Robert Scheid	Middlebury
Zim. Zimmerman	Middlebury
John Havley	Middlebury
Archer Campbell	Middlebury
Syvart Chestleson	Middlebury
John J. Morris	Middlebury
J. M. Ostrander	Waldwick
Waldwick	Waldwick
Dorman	Waldwick
Uren	Waldwick
Oak Park Cheese Co.	Mineral Point
Buck Grove Cheese Factory Co.	Mineral Point
Barrelton Cheese Factory Co.	Mineral Point
Forest Glen Cheese Factory Co.	Mineral Point
Laverly Cheese Factory Co.	Mineral Point
Jewell's Cheese Factory Co.	Mineral Point
Rosedale Cheese Factory Co.	Mineral Point
Mount Hope	Mineral Point
G. Klootgla	Mineral Point
E. C. Spooner	Mineral Point
Jacob Roth (2)	Mineral Point
John Deitrich	Mineral Point
W. Hastings	Mineral Point
Henry Tucker	Mineral Point
Schindler Cheese Factory	Moscow
Edward Berg's Cheese Factory	Moscow
Brager Cheese Factory	Moscow
Rettrum Cheese Factory	Moscow
Barber Cheese Mfg. Co.	Barber
High Point Factory	Highland
Wall Cheese Factory	Highland
L. E. Jones	Hillsdale
E. Zweigel	Avoca
Myron McIntyre	Avoca

IOWA COUNTY—Continued.

H. O. Delaney	Avoca
H. Hansalter	Avoca
Frank Stork	Avoca
Star Factory	Avoca
Mound Valley	Barneveld
Mitchell & Griffiths	Barneveld
Blue Grass Valley Cheese Factory	Barneveld
Rockwell Mills	Barneveld
Barneveld Creamery & Factory.....	Barneveld
Jones Valley Cheese Factory.....	Barneveld
Scheid's Cheese Factory	Barneveld
Ridgeway Cheese Factory	Ridgeway
Garrison Grove Cheese Factory	Ridgeway
Mill Creek Cheese Factory.....	Ridgeway
Crystal Spring Cheese Factory	Ridgeway
Arena Cheese Factory	Arena
John G. Vogal	Arena
Theodore Hottman	Arena
Mill Creek Cheese Factory	Arena
S. W. Wigming	Wyoming
Cold Spring Cheese Factory	Jonesdale
Jonesdale Cheese Factory	Jonesdale
Banner Cheese Factory	Jonesdale
Glen Cheese Factory Co.....	Hollandale
Long Valley Cheese Co.	Hollandale
Bonner Cheese Co.	Hollandale
Adamsville Cheese Co.	Hollandale
Pecatonica Cheese Co.	Hollandale
H. Ballerud Cheese Co.	Hollandale
River Forks Cheese Factory.....	Hollandale
John Ashelman Cheese Factory	Hollandale
John Silberger Cheese Factory	Hollandale
J. L. Leutenegger Cheese Factory.....	Hollandale
Casper Meyer Cheese Factory	Hollandale
Jacob Leggea Cheese Factory	Hollandale
North Hill Cheese Factory.....	Hollandale
J. Regez	Rewey
J. Regez No. 7 Cheese Factory.....	Linden
Thomas & Co.	Linden
Jacob Regez Cheese Factory (3)	Mifflin
The Johnston Cheese Co.....	Mifflin
Drybone Cheese Factory	Drybone
Pine Knob Cheese Factory	Pine Knob
Hyde's Mill Cheese Factory.....	Hyde's Mill
North Hill Cheese Factory.....	Adamsville
K. Knutson	Adamsville
Sandy Rock Cheese Factory	Adamsville
Rosendale Cheese Factory	Powell

JACKSON COUNTY—

Garfield Cheese Factory Ass'n.....	Price
Houghtonburg Cheese Factory	Merrilan
W. G. Hyslop	Alma Center

JEFFERSON COUNTY—

Ames Factory	Watertown
Tilden Cheese Factory	Watertown
Globe Cheese Factory	Watertown
Emmet Grove Cheese Factory	Watertown
Rock Cheese Factory	Watertown
John Stangler Cheese Factory	Watertown
G. Kuenzi Cheese Factory	Watertown

JEFFERSON COUNTY—Continued.

County Line Cheese Factory	Watertown
Gopher Hill Cheese Factory	Watertown
Main Street Cheese Factory	Watertown
Hancock Cheese Factory	Watertown
Sam. Kuenzi Cheese Factory	Watertown
Schlieve Factory	Watertown
Shields' Butter and Cheese Factory	Hubbleton
Cold Spring Butter and Cheese Factory	Waterloo

JUNEAU COUNTY—

Warren, Kimball & Co.	Union Center
H. L. Ashdown	Elroy
Farmers' Company	Elroy
J. K. Rowell	New Lisbon
Twin Bluff Cheese and Butter Co.	New Lisbon
Lone Rock Cheese and Butter Co.	New Lisbon
H. E. Elmer Cheese and Butter Co.	Hustler
Lone Rock Cheese Co.	Camp Douglas
J. W. Cross	Mauston
Geo. Winsor North Valley Creamery	Mauston
John Steiner	Mauston
August Steiner	Mauston
Frank Steiner	Mauston
J. W. Post	Camp Douglas
James Larson	Wonewoc
John Froelich	Wonewoc

KENOSHA COUNTY—

Nick. Spartz	Paris
--------------------	-------

KEWAUNEE COUNTY—

Jos. Dellain	Casco
Jos. Adams	Casco
F. W. Ouradnick	Casco
A. Kirchman	Rio Creek
Wenzel Slab	Rio Creek
A. & J. Ripley	Slovan
Jos. F. Adams	Slovan
Fred. Plinke	Rankin
Joseph Werg	Darbella
Chas. Rubens	Rosiere
Eugene Naze	Rosiere
Victor Braus	Rosiere
Brussels Farmers' Co.	Rosiere
G. Paul	Kodan
W. Ullsperger	Kodan
F. Geischow	Kodan
Farmers' Cheese Co.	Lincoln
Armand Noel	Lincoln
Jos. Dellain	Lincoln
P. J. Walicka	Krok
Geo. Bankall	Thiry Daems
Jos. Dellain	Thiry Daems
Frank Storzer	Curran
Geo. Kozina	Stangelville
Albert Kutzmacher	Stangelville
Bach, Kiewig & Poser Co.	Carlton
Frank A. Plansky	Carlton
Carlton Farmers' Dairy Ass'n	Carlton
John Waegli	Carlton
Anton Bourll	Carlton
A. W. Teske	Alaska

KEWAUNEE COUNTY—Continued.

Andrew Roth	Alaska
Peter Altmeyer	Alaska
Albert Kretsmacher	Ellisville
Jos. Roth	Ellisville
Bernhart Lost	Ellisville
Matt Schlis	Ellisville
Andrew Mahlek	Pilsen
Jacob Gasche	Pilsen
Vogal Bros.	Sandy Bay
Chas. Rubens	Duvall
D. Boulanger	Duvall
Barrett & Son	Duvall
M. Mueller	Norman
W. Ulsperger	Kodan
John Sipple	Norman
Wenzel Sipple	Norman
Frank A. Plausky	Norman
Ahnapee Farmers' Co.	Ahnapee
Fred. Walter, Jr.	Ahnapee
Geo. Paul	Ahnapee
John Bush	Ahnapee
J. G. Paolat	Ryan
Kozina Factory	Bolt
P. Lyons	Bolt
John Gosin	Luxembourg
Vick Bongean	Tonet
Halvers' Factory	Tonet
Fred. Heavers	Walhain
Geo. Kuekel	Walhain
Jos. Filz	Walhain
Victor Goodsoul	Tonet
Alvan Stahl	Luxembourg
Antoine Bredael	Dykesville
August Noel	Dykesville
John Gullickson	Algoma
F. L. Walter	Algoma

LA CROSSE—

Casper Andregg (Greenfield Cheese Factory)	Sigel
Bangor Swiss Cheese Co.	Bangor
Eathan Roberts	Burr Oak

LA FAYETTE COUNTY—

J. P. Rockwell & Co.	South Wayne
O. B. Ellis	South Wayne
Johnson Cheese Factory	South Wayne
S. Murphy & Co.	South Wayne
Hall Cheese Factory	South Wayne
Graham Cheese Factory	South Wayne
Truman Cheese Factory	Truman
Success Cheese Factory	Truman
Light House Cheese Factory	Truman
Union Cheese Factory	Calamine
Palace Cheese & Butter Co.	Darlington
O'Connor Cheese Factory	Darlington
Otter Creek Cheese Factory	Darlington
Lamont Central Cheese Factory	Darlington
Fraternal Cheese Factory	Darlington
A. Hershbrunner	Darlington
Alex. Rolle	Darlington
Thos. Vickers	Darlington
Fred. Leicht	Darlington

LA FAYETTE COUNTY—Continued.

P. F. McQuaid	Darlington
Yellowstone Factory	Yellowstone
Lyons Factory	Yellowstone
McClintock Factory	Yellowstone
John Dredinger	Argyle
Jake Hahlen	Argyle
John Theiler	Argyle
Jake Burkhardt	Argyle
Fred. Toman	Argyle
Fred. Bengrigger	Argyle
Henry Peterson	Argyle
Emil Armititz	Argyle
Samuel Ubert	Argyle
Peter Olson	Argyle
Chris. Marty	Argyle
Samuel Armititz	Argyle
Puddle Dock Cheese Factory.....	Argyle
Wm. Carey	Argyle
J. S. Wells	Woodford
A. S. Hansen	Woodford
Miller Cheese Factory	Woodford
Shellitts Factory	Fayette
Cook Factory	Fayette
Conley Factory	Fayette
Olsen Factory	Fayette
Springbrook	Wiota
Cherry Branch	Wiota
Wiota Factory	Wiota
Scisson Factory	Wiota
Sposer Factory	Wiota
E. Regez	Blanchardville
J. Brunwald	Blanchardville
Bokard	Blanchardville
J. Marty	Blanchardville
Co-operative	Blanchardville
Stromann Cheese Co.	Blanchardville
East Lamont Cheese Co.....	Lamont
M. Hefty Cheese Co.....	Lamont
Sanderson Cheese Co.	Lamont
Lamont Central Cheese-Co.....	Lamont
Dake's Prairie	Calamine
Mount Pleasant	Calamine
Peter Meich	Calamine
Willow Springs	Calamine
Defiance No. 11 Factory.....	Defiance

LANGLADE COUNTY—

W. J. Mattek	Deerbrook
Albert Borth	Antigo
Rooling Cheese Manufacturing Co.	Elmhurst

MANITOWOC COUNTY—

John Hertel	Meeme
Q. A. Danforth	Meeme
F. Simers	Meeme
M. Wideman	Cato
Adolph Milhaus	Reedsville
C. M. Krueger	Reedsville
E. C. Schwanke	Reedsville
Aug. A. Schley	Reedsville
Henry H. Meyer	Reedsville
Wm. Huese	Reedsville

MANITOWOC COUNTY—Continued.

Albert Beilke	Reedsburg
Chas. Dickert	Reedsburg
John Schmelter	Reedsburg
Fred. Bauch	Reedsburg
Robert Manke	Reedsburg
Wm. Pedding	Newtonburg
H. Bargaenbruch	Newtonburg
Lewis Keelhurst	Newtonburg
Albert Weger	Newtonburg
Jacob Behringer	Newtonburg
Martin Rhode	Newtonburg
H. Schulz	Newtonburg
Jos. Heinzen	Whitelaw
J. D. Nate	Maple Grove
Wm. Meyers	Maple Grove
Maltzke	Maple Grove
Moedke Junker	Maple Grove
F. Britzel	Maple Grove
William Rodewald	Timothy
Robert Nauman	Manitowoc
Herman Ackerman	Manitowoc
Peter Bleser	Manitowoc
Henry Meyer	Manitowoc
Chas. F. Meinert	Manitowoc
Henry Pluess	Manitowoc
J. Mallmann	St. Nazianz
Herm. Specht	Manitowoc
Chas. Lutzky	St. Nazianz
Wm. Karstaedt	St. Nazianz
Chas. Weinfarther	Michicott
John Bachhaus (Butter and Cheese)	Michicott
Aug. Fehrman	Michicott
Wm. England	Michicott
Chas. Fleutge	Michicott
Fred. Wide	Michicott
Adolph Zeddies	Michicott
Chas. Mendenwald	Kasson
Fred. Fetter	Alverno
S. Bremer	Alverno
H. Pleus	Alverno
Herman Risch	Larrabee
Frank Fenner & Bro.	Larrabee
Peter Griemer	East Gibson
Fred. Wilde	Shoto
Robert Waumann	Shoto
Anton Natjonitz	Shoto
Jos. Haverlick	Shoto
Gibson Farmers' Co.	Melnik
Herman Schroeder	Rosecrans
Jos. Froelich	Rosecrans
Fred. G. Meyer	School Hill
H. Barneubrush	Rube
E. Wehausen	Rube
J. Kasbaum	Rube
Otto Korstedt	Louis' Corners
Louis Voigt	Louis' Corners
Frank F. Thielke	Louis' Corners
Aug. Schleunes	Millhome
Joseph Rappel	Clark's Mills
Rockland Dairy Ass'n	Clark's Mills
Chas. Swerting	Clark's Mills
M. Sabel	Clark's Mills

MANITOWOC COUNTY—Continued.

Victor Vogle	Range Line
Ole E. Gigstad	Eaton
Wm. Bushe	Eaton
John B. Johnson	Eaton
Farmers' Dairy Ass'n	Oslo
Strangel & Mawhalen	Tisch Mills
Herm. Olm	Niles
Chas. Schwalbe	Niles
Wm. Buscher	Niles
Albert Karsted	Niles
F. H. Wageuknecht	Kiel
William Zillman	Kiel
James Smith	Stark
W. A. Koch	Nero
A. P. Erdmann	Nero
Albert Svacina	Taus
Wm. Damm	Taus
J. J. Havlichek	Francis Creek
Francis Creek Farmers' Cheese Co.	Francis Creek
John Steber	Francis Creek
P. C. Bleiser	Francis Creek
Kellner & Polifka	Kellnersville
Michael Sobel	Kellnersville
S. Mazauee	Kellnersville
R. C. Behnke	Wells
Peter Blaser	King's Bridge
J. B. Johnson	Clark's Mills
Mike Kelley	Clarks' Mills
Henry Hinges	Hika
Oscar Barthel	Hika
Jos. Schuber	Cooperstown
Herman Specht	Branch
Adolph Klemm	Branch
H. Wilharms	Northheim
H. Strodthoff	Northheim
Gustave Klemm	Two Rivers
Chas. Fleutje	Two Rivers
Henry Redker	Two Rivers
Robert Newman	Two Rivers
Klessig Bros.	St. Wendell

MARATHON COUNTY—

Fred. Michler	Wein
Herman Hahn	Nutterville
Henry Jacobi	Denny
Jacob Keehl	Abbottsford
Ferdinand Olm	Rozellville
Joseph Frane	Unity
Brighton Cheese Factory	Unity
Wm. B. McPherson	Spencer
Anton Log	Stettin
Ed. O. Pleisch	Naugart
Andrew Flaig	Colby
Adolph Hintze	Hogarty
Julius Kodi	McMillan

MARQUETTE COUNTY—

Neshkoro Cheese and Butter Co.	Neshkoro
Lake View Creamery Co.	Briggsville

MILWAUKEE COUNTY—

John Mehl	South Side
N. Simon	Milwaukee

MONROE COUNTY—

Valley Junction Cheese Factory	Valley Junction
Martin Pfyfe	St. Mary's
L. J. Schubert	Clifton
E. Kimball	Glendale
J. K. Powell	Oakdale
Kokon Anderson	Melvina
Fred. Luther	Norwalk

MARINETTE COUNTY—

Jos. Brooks	Peshtigo
John Hoganson	Porterfield

OCONTO COUNTY—

School Section Cheese Factory	Oconto
Warner & Moody	Brookside
R. H. Birr (Butter and Cheese)	Morgan
John Schrader	Linwood

OUTAGAMIE COUNTY—

Wasson & Cannon	Dale
Albert Drews	Dale
Birdell Nelson	Dale
P. Miller	Dale
H. Boyer	Dale
A. Nelson	Dale
A. Brickman	Dale
C. Holzschuh & Griener	Erb
P. Zonne	Appleton
D. W. Dean & Co.	Appleton
Nick Hass	Appleton
Nick. Simon	Appleton
W. H. Verity	Appleton
A. L. Murphy	Hortonville
P. Oak	Hortonville
M. L. O'Reilly	Hortonville
Chas. Westgate	Hortonville
Chas. Schanck	Hortonville
C. Wilton	Black Creek
Missling Bros.	Black Creek
W. N. Bergman	Black Creek
G. Schinkee	Black Creek
Albert Carter	Black Creek
E. P. Strassburger	Black Creek
Fred. Lachal	Black Creek
D. S. Crosby & Co. (3)	Seymour
Ed. Kliest	Seymour
Anton Kolb	Seymour
A. W. Reitz	Seymour
H. C. Burmeister	Seymour
Peter Dooley	Shiocton
Frank Henry	Shiocton
E. A. Huebner	Shiocton
C. W. Stauffer	Wittlin
P. G. Berry	Mackville
J. H. Steffen	Mackville
C. Freidt	Mackville
Jos. Schmidt	Mackville
Callan, Grant & Smith Co.	Stephensville

OUTAGAMIE COUNTY—Continued.

Will H. Manley	Stephensville
Peter Dooley	Stephensville
A. F. Decker	Stephensville
Peter Fastbinder	Stephensville
Wisconsin Butter and Cheese Co.	Medina
W. L. Root	Medina
Co-op. Cheese Factory	Medina
Chas. Breitrick (2)	Sagole
H. T. Nabbefelt	Sagole
Navarino Dairy Ass'n	Leeman
Town of Maine Dairy Co.	Leeman
C. A. Johnson	Sugar Bush
Crosby & Failey	Lawrenceville
C. Hahn & Co.	Lawrenceville
G. Lightfoot	Lawrenceville
L. C. Ovitt	Binghamton
Chas. Staefler	Binghamton
B. Griese	Binghamton
Nick Orth	Little Chute
K. Hoffman	Bear Creek
Theo. Wisler	Bear Creek
T. Young	Bear Creek
John Armstrong	Bear Creek
John Grube (2)	Greenville
C. Schneider	Greenville
John Fastbinder	Greenville
James Truck	Greenville
E. Huber	New London
Schmall Bros.	New London
C. J. Broderich	South Osborn
Henry Greb	South Osborn
Peter Fasbender	Bungert

OZAUKEE COUNTY—

H. Schellenberg	Horn's Corners
Jacob Merz	Holy Cross
Melchior Wester	Holy Cross
Chas. Mintzloff	Grafton
Gustave Schroeder	Grafton
G. Kohlwey	Grafton
August Locch	Grafton
August Hadler	Grafton
Alfred Lange	Druecker
John Ternes (4)	Belgium
H. P. Mueller (2)	Belgium
A. Antoine	Belgium
Gautner & Antoine	Belgium
Joseph Yantner	Belgium
Nick Porth	Lake Church
Henry Wester	Lake Church
Jno. Ternes	Lake Church
Frank Wellenstein	Lake Church
A. Antoine	Lake Church
Antoine & Gartner	Lake Church
J. S. Klessig (2)	Fredonia
C. H. Witt (3)	Fredonia Station
Al. Pens	Fredonia
John De Presse	Fredonia
F. Kuepper	Saukville
Chas. Laufer	Saukville
P. Miller	Saukville
Daniel Wittleriger	Kohler
Phil Pfeifer	Cedarburg

OZAUKEE COUNTY—Continued.

J. P. Fleschinger	Port Washington
John Pauley	Port Washington
Albert Koopman	Port Washington
Isaac Smith	Port Washington
Alfred Large	Port Washington

PEPIN COUNTY—

Chamberlain, Hakes & Co.	East Pepin
Adam Erickson	Durand

PIERCE COUNTY—

L. Ginser	Martell
Alois Grupfer	Plum City
Trimbelle Butter and Cheese Co.	Trimbelle
S. Sampson	Olivet
Grastie Creamery Co.	Olivet
Geo. Hoessly	Herbert
Ed. Kopp	Ono
Hans P. Tanberg	Viking
Rock Elm Creamery and Cheese Co.	Rock Elm
Aug. F. Falk	Rock Elm
L. A. Hess	Spring Valley
Lawton Cheese Co.	Rock Elm

POLK COUNTY—

Wm. F. Koch	East Farmington
-------------------	-----------------

PORTAGE COUNTY—

F. S. Holman	Amherst
Joseph O. Esterly	Polonia
G. T. Rowland & Co.	Buena Vista

RACINE COUNTY—

N. Spurtz	Union Grove
Fred. Jacquith	Burlington
Norway Butter and Cheese Co.	Union Church

RICHLAND COUNTY—

Westford Cheese Co.	Cazenovia
John Damer	Balmoral
F. E. Hissler	Balmoral
Chas. H. Brentel	Tavera
Mr. Pool	Buck Creek
Thos. Johnson	Boaz
A. & D. Beckwith	Dixon
W. J. Davis	Dixon
Walter Greenbeck	Dixon
E. F. Hamilton	Excelsior
E. O. Dorsh	Excelsior
H. J. Noyes	Richland Center
E. Kepler	Richland Center
Maple Grove Cheese Factory.	Viola
Twin Bluff Creamery and Cheese Co.	Twin Bluff
Ithaca Union	Ithaca

ROCK COUNTY—

Western Newark Creamery Co.	Beloit
Star Creamery	Beloit
Thompson & Rasey	Beloit
A. Engebretson	Beloit
Leo. Williams	Beloit
J. Speich	Orfordville

ST. CROIX COUNTY—Continued.

Geo. Bernath	Orfordville
H. J. Bullock	Milton
G. Augsberger	Evansville
A. Woodward	Clinton
J. & F. Newhall	Johnstown
C. B. Palmer	Lima Center
Harvey & Godfrey	Lima Center
Godfrey & Kurtz	Lima Center
James Newhall	Lima Center
Edgerton Creamery Co.	Milton
Avon Cheese Factory Co.	Avon

ST. CROIX COUNTY—

Spencer & Davis	New Richmond
Spencer & Teal	New Richmond
Hersey Cheese Co.	Hersey
Pine Lake Cheese Co.	Baldwin
Grasslic Cream & Cheese Co.	Baldwin
Henderson & Johnston	Boardman
J. A. Henderberg Cheese Factory.	Pleasant Valley
Roberts Creamery Co.	Hammond
Julius Beer	Houlton
E. T. Jepson	Emerald
Cylon Cheese Factory	Cylon

SAUK COUNTY—

A. Schoenman	Plain
John Anderson	Plain
Farmers' Cheese Co.	Plain
Poplar Grove Cheese Factory	Plain
James O'Malley	White Mounds
Henry Poole	Lime Ridge
Chas. Schumatz	Black Hawk
Geo. H. Holmes	Loganville
J. K. Powell	Ironton
Hutchins & Yunk	Valton
Sherwood Factory	Spring Green
Ellefson Factory	Spring Green
Maxwell Factory	Spring Green
Wm. Drake	Spring Green
E. & H. Staples	Mercer
Edward C. Sweet	Ableman
W. H. Fish	Reedsburg
John Diehl	Spring Grove
Wm. Meade	Sandusky

SHAWANO COUNTY—

P. R. Wilson	Whitcomb
F. Koenig	Leopolis
Pella Cheese Factory	Pella
Henry Grab	Caroline
Herman Mevis Co.	Caroline
Belle Plaine Cheese Factory (E. S. Hlchnam)	Belle Plaine
John Krickanmiths	Rose Lawn
Edward Rohen	South Osborn
J. S. Brummel	Pulcifer
James Dickson	Pulcifer
Fred Zuehlke	Bonduel
Mike Felton	Bonduel
F. Jaske	Briarton
Navarino Dairy Ass'n	Galesburg
Werner Creamery & Cheese Factory	Galesburg

SHAWANO COUNTY—Continued.

John Leonard	Laney
A. Thompson	Laney
Johnson Bros. & Co.	Frazer
Anton Siglinski	Wellhaven
F. Croning	Tilleda
P. Johnson	Hofa Park

SHEBOYGAN COUNTY—

J. E. Curtis	Plymouth
H. A. Chaplin	Plymouth
John Stecker	Plymouth
H. Roehrig	Plymouth
H. Scheibe	Plymouth
II. Schulz	Plymouth
Wm. Edler	Plymouth
Louis Helmer	Plymouth
Frank Gowin	Plymouth
Ferdinand Siemers	Plymouth
Wm. Joslin	Plymouth
John Devine	Parnell
J. F. Burke	Parnell
L. Goering	Parnell
J. F. Murray	Parnell
Aug. Wolf	Cascade
Albert Suemnicht-Winooski	Cascade
G. B. Glover	Cascade
C. H. Buohen	Cascade
Frank Hughes	Cascade
E. J. Keyes	Cascade
Mugan Bros. (2)	Cascade
Michelke Bros.	Cascade
Henry P. Mitts	Dacada
John Ternes	Dacada
II. A. Rehm	Franklin
Aug. Reineking	Franklin
Wm. F. Gartmann	Saint George
Chas. Gartmann (Six Corners' Cheese Factory)	Saint George
J. H. Thackray	Glenbeulah
Albert & Garling	Glenbeulah
C. F. F. Karstiedt	Mosel
II. E. Buechel	Mosel
Schreiber & Co.	Mosel
Wm. Ochs	Mosel
Frank Theman	Erdman
Emil Wilder	Erdman
F. Olm & Co.	Edwards
II. Kamann	Edwards
Frank Hughes	Cascade
F. Boldt	Gibbsville
John Rowerdink	Gibbsville
Christ. Strassburger	Howard
Ed. Schneider	Howard
Ed. Erlstoeser	Howard
Wm. Ochs	Howard
Wm. Siemers	Howard
Wm. Kohl & Co.	Howard
Geo. Horneck	Rhine
Henry Horneck	Rhine
I. De Snide	Cedar Grove
Garret Grotenhaus	Cedar Grove

SHEBOYGAN COUNTY—Continued.

T. Walvoord	Cedar Grove
E. Hemer	Cedar Grove
Grotenhaus & Wissink	Cedar Grove
C. E. Dana	Cedar Grove
A. C. Koehler	Waldo
Lemkuehl & Mentenk.....	Waldo
Ber Te Hennepe	Waldo
C. W. Gates	Waldo
Geo. Brickbauer	Elkhart
Henry Reineck	Elkhart
Jac. Strub	Elkhart
F. A. Mehlos	Adell
E. Spieker	Adell
W. Grashorn	Adell
Frank Kuepper	Random Lake
Albert Penz	Random Lake
Philip Pfeiffer	Random Lake
Emil Spercker	Random Lake
J. L. Magrit	Random Lake
Carl Britton	Sheboygan
Frank Themar	Sheboygan
Emil Wilder	Sheboygan
J. F. Moehrl.....	Silver Creek
Frank Straus	Silver Creek
F. J. Mulvey	Hingham
Mentink & Semkiel	Hingham
Robt. Donath	Scott
Chris. Spreth	Scott
Geo. Baum	Scott
A. M. Buchman	Saint Anna
Wendel Burg	Saint Anna
Peter Meyer	Saint Anna
G. C. Mayhew.....	Greenbush
Geo. Webb	Greenbush
Thos. H. Lamb.....	Hoard
E. Ven Dewall.....	Hoard
John Cosgrove	Rathbun
F. McNicholas	Pius
Tier Mais	Johnsonville
H. Schulz	Johnsonville
J. Gessert	Johnsonville
E. B. Melindy	Sheboygan Falls
John Dassow	Sheboygan Falls
Hugh Aloes	Sheboygan Falls
Kohl & Fenner.....	Sheboygan Falls
J. H. Dassow	Sheboygan Falls
Chris. Reinecke	Sheboygan Falls
August Habeghorst	Sheboygan Falls
Geo. Back	Sheboygan Falls
Dassow & Widder	Sheboygan Falls
Humphrey & Te Hennepe.....	Sheboygan Falls
U. Swann	Random Lake
John L. Magritz	Adell
Kunz & Co.	Oostburg
Frank Meyer	Oostburg
Fred. Gartmann	Oostburg
F. W. Gartmann	Oostburg
Wm. Huening	Oostburg
O'Connell Bros.	Scott
John Auppelle	Scott
Jos. Lensenk	Dacador
Anton Driefurst	Greenbush

SHEBOYGAN COUNTY—Continued.

C. M. Knowles	Greenbush
R. Rickmier	Glenbeulah
G. Krutkorasmer	Ada
Jacob Spindler	Edwards
J. Hersdorf	Edwards
Fred. Lucker	Edwards
Wm. Huenink	Ootsburg
Jacob Danne	Ootsburg
J. B. Huenink & Bro.....	Dacada
Evan D. Wall.....	Cedar Grove
G. J. Dulmes.....	Cedar Grove
John Le Ronde	Cedar Grove
J. Pehren	St. George
H. Tuttschell	St. George
E. B. Melendy	Gibbsville
Otto Boldt	Gibbsville
Otto Ehrlich	Gibbsville
A. Humphrey	Gibbsville
John Dasson	Winooski
A. Blenke	Winooski
W. Zelms	Rathbun
L. Goehring	Parnell
Joseph Hemmes	Mosel
Arthur Vater	Plymouth
C. H. Leecke	Plymouth
Jack Wolff	Plymouth
Spring Factory	Plymouth
J. G. Gessert	Rhine
August Bartete	Scott

TAYLOR COUNTY—

Farmers' Cheese Co.	Medford
Browning Cheese Co.....	Medford

TREMPEALEAU COUNTY—

Fuller & Johnson	Osseo
Little Elk Cheese Factory	Independence
Chimney Rock Cheese Factory	Chimney Rock

VERNON COUNTY—

Edward Liple	Manning
Adams & Mills	Dell
Avalanche Cheese Factory	Avalanche
Davison Rankinmot	Newton
Newton Butter and Cheese Factory	Esofea
Jos. H. M. Lees.....	Springville
C. C. Olson	Retreat
Fortune Bros.	Brestow

WALWORTH COUNTY—

Otto Scherer	Little Prairie
A. Woodard	Allen's Grove
Elgin Creamery Co.....	Sharon
Sharon Dairy Co.....	Sharon
State Line Factory	Sharon
C. H. Stubbs	Lyons
Marlatt & Kachel	Heart Prairie
Troy Co-operative Cheese and Creamery Association.....	Troy

WALWORTH COUNTY—Continued.

E. Malcomson (3)	Whitewater
Wm. Wright	Whitewater
J. G. Smith	Whitewater
Elkhorn Dairy Co.	Elkhorn
Adams Cheese Factory	Troy
Little Prairie Cheese Factory	Troy

WASHINGTON COUNTY—

J. H. Steiner	Meeker
E. Teschendorf	Saint Michaels
John Aupperle	Boltonville
Jos. Endress	Schleisingerville
L. Guth & Co.	Ackerville
Edward Knife	Ackerville
P. G. Hamahan	Kewaskum
John Dengel	Kewaskum
R. S. Demerest	Kewaskum
Chas. A. McCormick	West Bend
Geo. Kopp	West Bend
L. A. Landvotre	West Bend
Ernest von Gruenegan	Richfield
Ed. Kuenzi	Richfield
C. F. Richman	Hartford
Jos. Auffermann	Hartford
Myra Cheese Factory	Myra
Wendel Petri Estate	Wayne
Jack Hahn	Wayne
Wayne & Addison	Kohlsville
T. H. Jordan	Rockfield
Ph. Kuhn	Rockfield
P. P. Bast	Rockfield
R. Tice & Son	Rockfield
Geo. C. Grasse	Aurora
Chas. Stanske & Co.	Aurora
Herman Gruhle	Salter
E. W. Wittig & Co.	Fillmore
Reinhold Gerner	Fillmore
The Newburgh Creamery Co.	Fillmore
Augustin Cheese Factory	Newburgh
Erin Cheese Factory	Newburgh
Thompson Butter and Cheese Association	Thompson
Fred. Settle	Thompson
Geo. W. Tice	Addison
Jos. Aufdermann	St. Lawrence
John Jackel	St. Lawrence
Jac. Hamm	Jackson
	Kohlsville

WAUKESHA COUNTY—

Wisconsin Butter and Cheese Co.	Mukwanago
Wisconsin Butter and Cheese Co.	New Berlin

WAUPACA COUNTY—

Otto Kronke	Readfield
Jake Verholst	Readfield
Anton Portman	Readfield
Wm. Schneider	Readfield
Fred. Munding	Readfield
C. Rickmann	Manawa
Silver Lake Co-operative Creamery Association	Readfield
Mrs. F. L. Gibson	Scandinavia
	Lind

WAUPACA COUNTY—Continued.

Baldwin Creamery Co.....	Weyauwega
Henry Pope	Weyauwega
Nick Zern	Clintonville
Chas. Brownschwege	Clintonville
C. T. Wilda	Clintonville
Robert Roloff	Clintonville
John Zehren	Clintonville
Chas. Hackman	Bear Creek
Chas. Delo	Symco
P. H. Casper	Nicholson
Ruhsman & Co.....	New London
E. L. Aderhold	New London
C. A. Johnson	New London
A. R. Hills	New London
E. A. Huebner	New London
Schmal Bros.	New London
Chas. Schoenrock	New London
Iola Cheese Factory	Iola
J. H. Raloff	Symco
J. J. Sleiger	Fremont
J. M. Hickman	Fremont
Albert Boheen	Fremont
J. M. Hickman	Fremont
E. Roman & Co.....	Baldwins Mills
Fleece Bros.	Ostrander
Phil. Kissinger	Waupaca

WAUSHARA COUNTY—

Borth Cheese Factory	Borth
Elgin Creamery Co.....	Borth
Fountain Valley Factory	Poysippi
Moffat & Dewey Factory	Poysippi
Warren Cheese and Butter Co.	Fargoville
Saxville Cheese Factory	West Bloomfield
Herman Koehler	West Bloomfield
John N. Seaver.....	West Bloomfield
Terrill Cheese Factory	Terrill
Oasis Cheese Factory	Plainfield
P. M. Doerritz	Plainfield
Mount Morris Cheese and Butter Co.....	Mount Morris
Waushara Dairymen's Association.....	Waushara
White Clover Cheese Factory	Tustin
C. J. Waters	Brushville
John Lind	Tustin
Marion Cheese and Butter Co.....	Spring Lake
Springbrook Cheese Factory	Spring Lake
W. Wallers	Auroraville
J. J. Clark	Auroraville
Pine River Association	Pine River

WINNEBAGO COUNTY—

Wm. Pribbernow	Zittan
Ed. Newman	Zittan
Fred Spiegelberg	Zittan
Adolph Grimm	Zittan
Christ. Boss	Clemansville
Sam Boss	Clemansville
C. Rutler	Clemansville
Elder Creek Cheese Factory	Orihula
Wolf Hill Cheese Factory	Orihula
Krenke & Co. Cheese Factory	Orihula
Adolph Grimm Cheese Factory	Buttes des Morts

WINNEBAGO COUNTY—Continued.

Chas. Kuettel	Buttes des Morts
D. Steiner	Buttes des Morts
Clemens Reuteler	Buttes des Morts
Sam Boss	Winnebago
Angus & Humphrey	Oshkosh
R. E. Abrams	Oshkosh
John Ryf	Oshkosh
Chas. Perrin	Oshkosh
Wm. Greenwald	Oshkosh
M. Kuttell	Oshkosh
Robert Smilie, Sr.	Oshkosh
Henry Scheller	Oshkosh
Casper Pfeiffer	Oshkosh
Wm. Schmitt	Oshkosh
Wm. L. Jones	Winchester
Rasmus Hanson	Winchester
Ed. Newmann	Winchester
Winchester Cheese and Butter Co.	Winchester
Isaac McKinley	Winchester
Jos. Schneider	Winneconne
Chas. Marin	Winneconne
Winneconne Butter and Cheese Co.	Winneconne
G. Shultz	Winneconne
Chas. Marrison	Winneconne
G. Shultz (2)	Poygan
G. W. Washburn	mro
Wm. McKinley	Neenah
Wm. Elide	Neenah
N. Simon & Co.	Neenah
Coldsprings Cheese and Butter Co.	Menasha
Dempardt Miller	Menasha
Benjamin Ablard	Nekimi
Jacob Nohld	Nekimi
W. P. Greenman	Nekimi
Lambert & Scanlar	Pisk
Allenville Cheese Factory	Allenville
Vasburger Cheese Factory	Allenville
Adolph Grimm	Allenville
Rabie Cheese Factory	Vinland
Dewhard & Mills	Vinland
Faber Cheese Factory	Clemensvills
Vinland Cheese Factory	Clemensville
Jacob Schmaker	Winneconne
L. Miller	Winneconne
J. W. Jeffers	Winneconne
J. J. Tucker	Winneconne

WOOD COUNTY—

Anton Hensler	Bakersvills
John Rothenberger	Bakersville
Grand Rapids Cheese Factory	Smyrna
Hewitt Co-operative Co.	Hewitt
Four Mile Creek Cheese Factory	Grand Rapids
Sherry Lumber Co. Cheese Factory	Sherry
Geo. Koenig	Centralia
Farmers' Cheese Factory	Auburndale
Sickles Co. Cheese Factory	Pittsville
A. J. Empey	Milladore
Herman Hassler	Vesper
Herman Theel	Granite
John Blenker	Blenker
Amiel Nacht	Aitdorf
J. J. Armstrong	Welcome Creek

CREAMERIES.

Post Office.

ADAMS COUNTY—

Spring Creek Creamery.....Spring Creek
 Monroe and Strong's Prairie Creamery Association.....Monroe Center

ASHLAND COUNTY—

Ashland County CreameryButternut

BARRON COUNTY—

Barron Co-operative Creamery Co.....Barron
 S. W. Hines & Co.....Cumberland
 Cumberland Creamery Co.Cumberland

BROWN COUNTY—

Green Bay Creamery Co.Green Bay
 John CornelesonDe Pere
 Martin KlipstineLittle Rapids
 Jacob Law & SonsGreen Bay
 William DeohueGreen Bay
 August MutzkeWayside
 C. F. GrieseWayside
 Morris BraemeauWayside
 August KickhaeferWayside

BUFFALO COUNTY—

Mondovi Creamery and Cheese Co.....Mondovi
 Holmes Landing Creamery.....Fountain City
 Clover Leaf CreameryAlma
 Burnside Co-operative Creamery Co.....Misha Mokwa
 Geo. Tarrant & Son Skimming Station.....Urne
 A. O. Lee.....Modena
 F. Tritsch & Bro.....Cream
 John HaighCream

BURNETT COUNTY—

Trade Lake CreameryTrade Lake
 Grantsburg Creamery Co.....Grantsburg

CALUMET COUNTY—

Heckert & AlbertChilton
 A. F. DeckerChilton
 Nagle & GeigerBrillion
 A. N. ZelkeBrillion
 Dundas Butter & Cheese Co.....Dundas
 Grashorn & AlbertNew Holstein
 Matt. MoerschBrothertown
 J. D. GrandineSherwood
 Edwin Fenton Co.....Sherwood
 Henry SkidmoreStockbridge
 H. U. Reiff.....Stockbridge
 John L. Wermer.....Stockbridge
 Holstein Creamery Co.....New Holstein

CHIPPEWA COUNTY—

Snyder Bros.Cooks Valley
 Snyder Bros.Bloomer
 H. G. St. Louis.....Cooks Valley
 D. J. Cartwright.....Cooks Valley

CLARK COUNTY—

Colby Creamery Co.....	Colby
A. Albert	Thorp
Clark County Creamery Co.....	Globe
Granton Co-operative Creamery Association.....	Granton
Neillsville Creamery Co.....	Neillsville
Clark County Butter Co.....	Neillsville
Geo. A. Austin.....	Neillsville
W. G. Hyslop	Neillsville
Loyal Separator Creamery Association.....	Loyal
J. C. Marsh	Loyal
Christie Creamery Co.....	Christie
Longwood Co-operative Creamery Co.....	Longwood
J. C. Marsh	Spokeville
W. F. Meyer.....	Greenwood
W. F. Irving, Agent.....	Longwood
Solon Davis	Wilcox
John Kubat	Wilcox

COLUMBIA COUNTY—

Mrs. Wm. Cuff.....	Rocky Run
F. W. Henry	Rocky Run
F. C. Curtis	Rocky Run
Portage Creamery Co.....	Portage
Port Hope	Portage
Keyeser Creamery Co.....	Keyeser
S. Sampson	Otsego
Simmons & Hutson.....	Arlington
H. R. Moldenhauer & Bro.	Cambria
Wm. Meilkie	Rio
S. Sampson	Rio
Dodge & Campbell	Fall River
Ernest Britzman	Fall River
Bussard, R. M., & Co.	Poynette
Highland Grove Creamery	Poynette
Columbus Cheese Factory	Columbus
O. A. Trowbridge	Columbus
Wm. Hamann	Columbus
Fred. Hamann	Columbus
A. E. Chievers	Columbus
Spring Brook Creamery	Columbus
Henry Lang, Jr.	Columbus
John E. Hanson	Columbus
G. W. Scott	Columbus
Lodi Creamery Co.....	Lodi
Simons and Hutson.....	Lodi
Spring Valley Cheese and Butter Co.....	Lodi
Crystal Lake Creamery Co.	Lodi
George L. Chaffin.....	Lodi
Wm. Milkie	Corinne
G. A. Kimball.....	Arlington
Mr. Worth—Skimming Station.....	Cambria
South Hampden Creamery Co.....	Hampden
Ford & Ohler, House & Co.....	Hampden
F. A. Fields.....	Kilbourn City
Leeds' Creamery	Leeds Center
H. H. Smith.....	Marcellon
Holcomb Bros.	Pardeeville
Eugene Taylor	Randolph Center
Simons & Hutson	West Point
Englewood Creamery	Fall River

CRAWFORD COUNTY—

Eastman Butter Manufacturing Co.....	Eastman
Star Valley Creamery	Towerville
Seneca Dairy Association	Seneca
Kickapoo Valley Creamery Co.....	Stuben
Barnum Creamery Co.	Barnum
Wauzeka Butter Co.....	Wauzeka
Belle Center Creamery Co.....	Belle Center
Soldiers' Grove Creamery Co.....	Soldiers' Grove
Gay's Mill Creamery Co.....	Gay's Mill
Mt. Sterling Creamery Co.	Mt. Sterling
Prairie du Chien Creamery Co.....	Prairie du Chien
J. L. E. Wunsch	Belle Center

DANE COUNTY—

Roach & Seeber (2)	Sun Prairie
J. V. Starker	Sun Prairie
Roach & Seeber Co.....	Burke
Burke Creamery	Burke
Nelson Creamery Co.....	Burke
Ruben Hiney	Sauk City
D. E. Wood & Co.....	Elgin, Ill.
J. L. Colby, Sec.....	Story
Hillside Creamery Co.....	Amos
Farmers' Butter Factory	Hanerville
Dodge & Dodge	Token
J. F. Neefe & Co.....	Cottage Grove
A. C. Kretlow	Cottage Grove
Green, Wood & Co.....	Cottage Grove
W. Blair	Cottage Grove
Kalschens Bros.	Pine Bluff
Oak Hall Creamery Co.....	Floyd
M. Lindas, Sec.....	Adsit
Dodge & Drake.....	Pierceville
C. Graak	Springfield Corners
Crystal Lake Creamery Co.....	Roxbury
Henry Ruben	Roxbury
Henderson Creamery	Henderson
Hoard's Creamery	Cambridge
Christiana Cheese and Butter Co.....	L. Cambridge
Daleyville Creamery Association	Perry
Indian Hill Creamery	Perry
Dahlby & Co.	Perry
H. B. Dahle Creamery	Elvers
Blue Valley Creamery (Dahle & Meyers).....	Grit
Paoli Creamery Co.	Paoli
Dahle Bros.	Mt. Horeb
Black Earth Co-operative Dairy Association.....	Black Earth
Maple Grove Creamery	Black Earth
Blue Mounds Creamery	Blue Mounds
D. E. Wood & Co.....	Belleville
Chas. Vernon	Verona
Maslott & Clark Creamery	Mt. Vernon
Chas. German	Middleton
Parman & Hunt	Middleton
House & Tyler	Middleton
Perry Center Cheese Factory.....	Forward
Spring Valley Creamery	Spring
Hopkins Bros.	Middleton
Utica Creamery Co.	Utica
Prairie Queen Creamery	Cambridge
Crystal Creamery	Verona
Dodge & Dodge	Windsor

DANE COUNTY—Continued.

Deansville Farmers' Creamery Association.....	Deansville
Wheeler Prairie Creamery Co.....	Stoughton
Frank Rider	Middleton
H. Berkholz	Middleton
Chaffee & Ziegler	Dane
W. F. Febock	Mendota
Rockdale Creamery Association	Rockdale
Chas. Tellofson	Rockdale
Oddland Factory	Rockdale
J. R. Ellis & Sons	Oregon
Oak Hall	Oregon
Christina Cheese and Butter Co.....	Utica
Utica Co-operative Creamery	Utica
Edgerton Creamery Co.....	McFarland
Marxville Creamery Co.....	Marxville
Roach & Seeber Co.....	Nora
Eclipse Creamery	Windsor
Ideal Creamery Co.	Windsor
J. Vischon	Windsor
C. J. Dodge	Windsor
Marshall & Steel	Waunakee
Spring Valley Creamery	Waunakee
Karow Bros. & Strehlow	De Forest
North Windsor Creamery Co.....	De Forest
Edgerton Creamery Co.....	Albion
Jno. Brown	Riley
Robt. Marshall	Marshall
Mendina Butter and Cheese Co.....	Marshall
Karow Bros. & Strehlow	Stoughton
Edgerton Creamery Co.....	Stoughton
Roach & Seeber	London
Roach & Seeber	Deerfield
Dodge & Crump	Deerfield
Deansville Creamery Co.....	Deansville
H. S. Ripp & Bros.....	Cross Plains
Hy. Scheele & Sons.....	Cross Plains
Mazomanie Creamery Co.....	Mazomanie
Mounds Creek Creamery Co.....	Mazomanie
Halfway Prairie Creamery Co.....	Mazomanie
John Stark	East Bristol
Edgerton Creamery Co.....	Clarkson
August Soper	Roxbury
Hutson & Simons	Roxbury
C. J. Browne	Mt. Vernon
S. Hutson (2).....	Ashton
P. Horst	Ashton
W. A. Strasburg	Norway Grove
York Center Creamery Co.....	Hamlin
Ernest Karow	De Forest
Mansfield & Orvold	Clarkson

DODGE COUNTY—

Hatcher & Co.....	Atwater
Christian & Puerner (4 Factories).....	Atwater
W. F. Jones (3 Factories).....	Burnett Junction
Toland Creamery Co.....	Toland
Clearwater Springs Dairy Factory	Lowell
North Lowell Center Butter and Cheese Factory.....	Lowell
Welsh Road Factory	Richwood
Posey Creamery	Richwood
Lean Bros. Creamery.....	Randolph
L. G. Woodworth	Randolph

DODGE COUNTY—Continued.

Rolling Prairie Jersey Creamery	Rolling Prairie
Riverside Creamery	Mayville
Upland Creamery	Mayville
Ward & Laffey	Randolph
Mr. George Hansen	Knowles
Gold Medal Creamery	Reeseville
H. Heck & Co.	Iron Ridge
M. & D. Ehrhardt Butter and Cheese Factory	Knowles
Fox Lake Creamery	Fox Lake
Frank Downey	Fox Lake
A. Graham	Fox Lake
A. W. Lehman Creamery	Neosha
Highland Creamery	Theresa
Rock River Creamery	Theresa
Rock Island Creamery	Theresa
Upland Creamery	Theresa
Beaver Dam Creamery	Beaver Dam
Lake Shore Creamery	Beaver Dam
Trenton Creamery	Beaver Dam
Hatcher Creamery	Beaver Dam
C. Grashon	Beaver Dam
Lost Lake Creamery	Lost Lake
Ohrmundt & Groneudt	Lost Lake
The G. C. Mansfield Co.	Juneau
Baehler & Homlein Creamery	Juneau
G. W. Ohrmundt	Reeseville

DOOR COUNTY—

Fred. Hanson	Jacksonport
--------------------	-------------

DUNN COUNTY—

Rusk Co-operative Creamery Co.	Rusk
O. W. Masee Creamery Co.	Louisville
Colfax Creamery Association	Colfax
Geo. Tarrant & Sons.	Eau Galle
Hudson Road Creamery	Menomonie
The Roberts Creamery Co.	Knapp
Downing Manufacturing Co.	Downing
Meridian Creamery Co.	Meridian

EAU CLAIRE COUNTY—

Victory Dairy Co.	Augusta
Rosedale Creamery	Augusta
Fairchild Creamery Co.	Fairchild
Fall Creek Creamery Co.	Fall Creek

FOND DU LAC COUNTY—

Mathew Michael	Calumetville
J. H. Quick	Lamartine
A. J. Amend	West Rosendale
H. Friday	Fairwater
Hobbs Bros. (2 Factories)	Metomen
A. J. Amend	Metomen
J. E. Amend	Ripon
Democrat Prairie Cheese and Butter Co.	Ripon
Oheler & House	Alto
B. Kloosterboer	Alto
Gus. Keeseaman	Alto
H. C. Downy	Alto
H. D. Stetsel	Alto
Frank Meyers	Bing
W. J. Stahlbury	South Byron

FOND DU LAC COUNTY—Continued.

Louis Loehr	Johnsburg
Anton Blonien	Johnsburg
Highland Creamery Co.	Kinwood
Alto Creamery	Alto
M. J. Michels	Johnsburg
Frank March	Elmore
R. D. Sill	Waupun
C. A. Atwood	Waupun
W. Hatcher & Co.	Waupun
Bristol & Morgan	Waupun
A. E. Hill	Rosendale
H. Grell Butter Co.	Rosendale
Geo. Kreitzinger	Campbellsport
Hobbs Bros.	Brandon
S. B. Friday	Brandon
Fountain Creamery Co.	Pebbles
Anton Dreifuerst & Co.	St. Cloud
Ed. Kosb	Marytown
A. Stephany	Malone
Louis Loehr	Malone
Matt. Michels	Calumet Harbor
C. A. Atwood	Ladoga
J. A. Stratz	Woodhull
D. S. Crosby	Rogersville
Rock River Co.	Oak Center
Cebell & Kottenberg	Oak Center
Boemer & Meuer	Ashford
D. D. Jones	Byron
Amel Warnkee	Fond du Lac
J. E. Knott & Co.	Fond du Lac
J. A. Emerson	Lamartine
C. E. Nash	Lamartine
Arnold Petri	Calvary
Anton Boelin	Calvary
Bristol, Morgan & Co.	Oakfield
Highland Creamery Co.	Oakfield
J. E. Neef	Ladago
E. Parsons	Ladago

GRANT COUNTY—

Mount Lion Creamery Co.	Cornelia
Dyer & Co. (2 Factories)	Cornelia
Richland & Vannatti	Cornelia
Platteville C. & P. Co.	Cornelia
Kieler Butter and Cheese Factory	Kieler
Georgetown Creamery Co.	Georgetown
Hazel Green Creamery Co.	Hazel Green
Ellenboro Creamery Co.	Ellenboro
Elgin Creamery Co.	Lancaster
W. H. Hunt	Potosi
Northwestern Creamery Co.	Elmo
Elgin Creamery Co.	Preston
F. A. Chandler	Preston
Hinn, Hildebrand Co. (Limited)	Fennimore
F. A. Chandler	Fennimore
Big Patch Skimming Station	Big Patch
Thompson Butter Co.	Big Patch
Louisburg Butter and Cheese Co.	Louisburg
H. F. Stagman & Co.	Bagley
W. H. Hunt	Burton

GRANT COUNTY—Continued.

Mt. Hope Dairy Association	Mt. Hope
Hinn, Hildebrand Co.	Mt. Hope
Millville Creamery Co.	Millville
J. W. Horsfall & Co.	Millville
Brodttville Creamery Co.	Brodttville
Bloomington Creamery Co.	Bloomington
A. R. Allen	Patch Grove
Platteville Cheese and Produce Factory	Platteville
H. J. Noyes	Muscoda
Lancaster Creamery Co.	Lancaster
Platteville Ridge No. 2.	Platteville
Bunker Hill Creamery Co.	Platteville
Whitchers' Creamery	Platteville
Elgin Creamery Co.	Montford
Elgin Creamery Co.	Livingston
Elgin Creamery Co.	Stitzer
Klindt Geiger & Co.	Cassville
Geo. E. Groom	Cassville
Chas. Stephens	Ellenboro
Mrs. Geo. Springer (2 Factories) (Ellenboro Creamery Co.)....	Ellenboro
North Andover Dairy Association.....	North Andover
Cuba City Butter and Cheese Co.	Cuba City
Richwood Creamery	Boscobel
Hinn, Hildebrand Co.	Hickory Grove
W. H. Hunt	Hurricane
Wyalusing Co-op.	Wyalusing

GREEN COUNTY—

Monticello Creamery Co.	Attica
G. A. Trepp	Brooklyn
J. R. Ellis & Co.	Brooklyn
R. Zimmerman	Brooklyn
J. Specks & J. Marty	Sylvester
A. Specks	Sylvester
Juda Creamery	Juda
A. Speich	Juda
D. E. Wood & Co.	Browntown
Stearns Creamery Co.	Stearns
D. E. Wood & Co.	Albany
Frank Gesser	Monroe
Jacob Spech	Monroe
D. E. Wood & Co.	Monroe
Polk Creamery	Polk
H. Trumpy & Son.....	Clarno
A. Notting & L. O. Knudsen	Brodhead
C. W. Singlehurst	Brodhead
John Newman Co.	Martintown
Fred. Hefty	Schultz
John Newman	Schultz
Dayton Dairy Association	Dayton
John Newman Co.	Stewart
W. H. Manser	Oakley
Monticello Creamery Co. (2 Factories).....	Monticello
E. South Creamery	Polk
James P. Younger	Polk
Fred. Knudert Creamery	New Glarus
F. R. Moles Creamery	Jordan
Robt. Steele	Albany
The D. E. Wood Butter Co.....	Albany

GREEN LAKE COUNTY—

Groose & Haas	Kingston
H. P. Friday	Markesan
Mackford Prairie Co.	Markesan
Berlin Creamery Co.	Berlin
Wohlwend Bros.	Berlin
Wohlwend Bros.	Princeton
Hadgson's Creek Butter and Cheese Co.	Berlin
Seneca Butter and Cheese Co.	Berlin
J. F. Groose	Manchester
Amend Co.	Dartford
Lake Emily	Stanford
Henry Friday	Green Lake
F. Haar	Markesan
J. L. Clark	Berlin

IOWA COUNTY—

Otter Creek Creamery Co.	Union Mills
Union Mills Creamery Co.	Union Mills
J. P. Younger	Union Mills
Mitchell & Griffith's Creamery Co.	Hyde
Blue Mounds Valley Creamery Co.	Mazomanie
Spensley & Co.	Mineral Point
Highland Creamery Co.	Highland
J. P. Younger Factory	Highland
Ridgeway Creamery Co.	Ridgeway
J. P. Younger	Cobb
Otter Creek Creamery	Edmund
J. P. Younger Creamery	Edmund
Dry Bone Creamery	Dry Bone
P. J. Kobstrop	Jonesdale
C. J. Heim	Jonesdale
Hollandale Co-op. Creamery Co.	Hollandale
Mitchell & Griffiths' Creamery Co.	Dodgeville
Dodgeville Co-op. Creamery Co.	Dodgeville
Spenseley & Co., Creamery	Linden
Mound Creek Creamery	Arena
Dry Bone Creamery	Dry Bone

JACKSON COUNTY—

J. R. Sechler & Son	Sechlerville
W. G. Hyslop	Melrose
North Bend Co-op. Creamery Co.	North Bend
W. G. Hyslop	Alma Center
Schmidt, Carlan & Grant	Stephensville
W. G. Hyslop	Melrose

JEFFERSON COUNTY—

Bollman & Co.	Bernhard
Albert Teich	Navan
Alfred Wilman	Navan
W. M. Dawe	Werner
Hintz & McCrider Co.	Pipersville
Roberts & Reese	Pipersville
A. R. Hoard	Oakland
Oakhill Co-op. Cheese and Butter Co.	Oakhill
Wm. Dawe	Oakhill
Karow Bros. & Co.	Ebenezer
E. C. Dodge	Lake Mills
G. J. Millard	Lake Mills
Greenwood & Strasburg	Lake Mills

JEFFERSON COUNTY—Continued.

Ihaberman & Breitzman	Lake Mills
Union Creamery Co.	Lake Mills
Louis Woelffer	Lake Mills
Favill Grove Creamery	Lake Mills
Rock Lake Creamery	Lake Mills
Rome Dairy Co-op. Creamery	Rome
C. L. Calkins	Palmyra
Albert Koch	Palmyra
Fountain City Creamery	Palmyra
Tom. Sanders	Palmyra
Corner Grove Creamery Co.	Palmyra
Wilbe & Cook Creamery Co.	Palmyra
A. G. Haag Factory	Helenville
C. F. Pohlman	Helenville
A. R. Hoard	Koshkonong
Maple Leaf Creamery Co.	Jefferson Junction
B. Oestrich	Sullivan
Miller & Zahn	Sullivan
C. F. Greenwood & Co.	Milford
Milford Creamery Ass'n	Milford
Herman Teich	Milford
James Campbell	Jefferson
Harvey Creamery Co.	Jefferson
Riverside Creamery Co.	Jefferson
Maple Leaf Creamery Co.	Jefferson
Henry Schemp	Sumner
Hoard's Creamery	Hebron
Billett & Marshall	Hebron
Schempf & Godfrey (2 Factories)	Hebron
Bark River Cheese Co.	Hebron
H. C. Christians Co.	Aztalan
Jahnke Bros.	Aliceton
Roberts & Reese	Concord
C. Kaulaf	Concord
Wm. Yandery	Cold Springs
Schimp, Kuuz & Godfry	Cold Springs
The D. E. Wood Butter Co.	Cold Springs
Fairview Creamery Co.	Harvey
Elgin Butter Co.	Ixonia
Ixonia Butter and Cheese Co.	Ixonia
Watertown Creamery Co.	Watertown
May's Creamery Co.	Watertown
North Road Factory	Watertown
West Road Creamery Co.	Watertown
Jos. Brooks Creamery	Watertown
South Road Creamery Co.	Watertown
Lake View Creamery Co.	Watertown
Blecker Grove Creamery	Hubbleton
Union Creamery	Hubbleton
Rypkie Grove Creamery	Hubbleton
Roach & Seeber Co.	Waterloo
York Center Creamery Co.	Waterloo
Waterloo Butter and Cheese Co.	Waterloo
Geo. C. Mansfield Co. (7 Factories in the county)	Johnson's Creek
H. C. Christians Co. (4 Factories)	Johnson's Creek
Johnson's Creek (H. J. Grell Butter & Egg Co.)	Johnson's Creek
Grellton (H. J. Grell Butter & Egg Co.)	Watertown
Manz & Holenberg	Johnson's Creek
A. R. Hoard (5 Factories)	Ft. Atkinson
H. Schempf (3 Factories)	Ft. Atkinson
Geo. Hartel	Ft. Atkinson

JEFFERSON COUNTY—Continued.

South Koshkonong	Ft Atkinson
C. Kohloff	Farmington
L. Palman	Farmington
Duck Creek Creamery	Jefferson
J. P. Galloway	Koshkonong

JUNEAU COUNTY—

W. P. Donnett	Wonewoc
Union Center Creamery Co.	Union Center
Arbor Creamery Co.	Union Center
C. F. Mutch	Elroy
J. K. Rounds	New Lisbon
G. B. Winsor (N. Valley Creamery)	Mauston
Necedah Creamery	Necedah

KENOSHA COUNTY—

Oatman Bros.' Factory	Salem
Cyrus Benedict	Brighton
Wm. Klosmeyer	Brighton
Oatman Bros.	Wilmot
Farmers' Wilmot Creamery	Wilmot
Meane Creamery	Burlington
S. D. Slade (Slade's Corners Creamery)	Slade's Corners
Karnes' Corners Creameries	Woodworth
Woodworth Creamery	Woodworth
North Creamery	Woodworth
Farmers' Dairy Association	Bassett
H. B. Kellogg	Ranney
Oatman Bros. (2 Factories)	Bristol
Truesdell Creamery Co.	Pleasant Prairie
F. R. Snyder	Pleasant Prairie
Wm. Peterson	Wheatland
Trevor Creamery Ass'n	Trevor
Brighton Star Creamery	Silver Lake
Truesdell Creamery Co.	Truesdell
Mt. Pleasant Butter Co.	Somers
Kenosha County Star Creamery	Somers
Somers' Creamery	Somers
Farr Corners Creamery	Paris
Kenosha County Star Creamery	Paris
C. B. McKanna	Wheatland
Wm. Peterson	Wheatland

KEWAUNEE COUNTY—

Albert Hoppe	Rio Creek
Green Bay Creamery (Skimming Station)	Casco

LA CROSSE COUNTY—

H. H. Bosshard	Burns
Holman Creamery Association	Holman
West Salem Co-op. Creamery Ass'n	West Salem
A. C. Hanson (Mindoro Creamery Co.)	Mindoro
James Barclay	Mindoro
John H. Dahle	Burr Oak
Bangor Co-op. Dairy Association	Bangor
Mrs. Samuels	Barre Mills
Rockland Creamery	Rockland

LA FAYETTE COUNTY—

Whiteoak Dairy and Feed Ass'n.....	Whiteoak
T. Isaac Vickers (Skimming Station).....	Meeker's Grove
Elk Grove Creamery	Elk Grove
Geo. Meyers	Red Rock
Wardsville Separating Creamery Co.....	Shullsburg
Shullsburg Creamery Co.....	Shullsburg
Jos. Blackstone	Shullsburg
Dodge Grove Creamery	Leadmine
Columbia Creamery	Benton
Rudolph Miller	Dumbarton
D. E. Wood Butter Co.....	Gratiot
Krogg & Dettimer	Belmont
The D. E. Wood Butter Co.....	Gratiot
Town Line Creamery	Gratiot
New Diggings' Dairy and Feed Ass'n.....	New Diggings
D. E. Wood & Co.....	South Wayne
J. Newman	South Wayne
Avon Creamery Co.	Darlington
Wardsville Creamery Co.	Darlington
Pleasant View Creamery Co.	Darlington
Otter Creek Creamery Co.....	Darlington
R. H. Driver (2 Creameries).....	Darlington
R. T. Scott & Co.....	Yellowstone
Argyle Creamery (Jno. Newman Co.).....	Argyle
J. Newman Co.	Yellowstone
F. R. Moler	Woodford
Fayette Creamery Co.	Fayette
Wiota Creamery	Wiota
John Newman	Blanchardville
Bethel Grove Creamery	Truman
Albert Pool	Lamont
John Newcomb Co.	Lamont
J. H. Clarkson	New Diggings
D. E. Wood Butter Co.	Wiota
Dodge Grove Creamery	Leadmine

LANGLADE COUNTY—

Antigo Cheese and Creamery Co.....	Antigo
------------------------------------	--------

LINCOLN COUNTY—

The Russell Creamery Co.	Dudley
J. A. Young	Merrill
Chas. Dickert	Corning

MANITOWOC COUNTY—

Adolph Klessig	Osman
Martin Rhode	Norheim
Klessig Bros.	St. Wendel
Henry Hingiss	St. Wendel
P. H. Peacock	East Gibson
Jas. Mallman	Rube
H. Bargaenbusch	Rube
F. Simers	Meeme
Chas. Weinfather	Tisch Mills
John Backhaus	Mishicott
Cleveland Creamery Co.	Cleveland
Oscar Bartel	Cleveland
Frank Fenner & Bro.....	Larrabee
H. Strathoff	Alverno
R. C. Belnke	Wells

MANITOWOC COUNTY—Continued.

Simon Geger	Kasson
E. Bruckschew & Co.	Timothy
H. Werner	Maple Grove
Frank Kelbeck	Whitelaw
Herman Strodhoff	Newtonberg
Wisconsin Butter and Cheese Co.	Reedsville
Manitowoc Creamery Co.	Cato
Herman S. Schultz	Manitowoc
Manitowoc Creamery Co.	Manitowoc
Jacob Behringer	Manitowoc
Fred. Bremer	Manitowoc
Alex. McAdam	Manitowoc

MARATHON COUNTY—

Anton Braun	Poinatowski
Aug. Ritger & Co.	Marathon
Gotlieb Koehler	Hamburg
Ludwig Mootz	Barney
Henry Belke	Stettin
Andrew Flaig	Colby

MARINETTE COUNTY—

John Hoganson	Posterfield
---------------------	-------------

MARQUETTE COUNTY—

Germania Creamery Co.	Germania
John Ellis	Moundville
Lakeview	Briggsville
B. D. Brigham	Westfield
W. N. Johnson	Oxford
Stockholders' Creamery Co.	Douglas Center

MILWAUKEE COUNTY—

Oatman Bros.	Stargard
Cornelius Taylor	Wauwatosa

MONROE COUNTY—

T. L. Martin (Wilton Creamery Co.)	Wilton
Cold Spring Co-op. Creamery	Wilton
F. J. Krakanbuhl	Milvina
Melvina Creamery Co.	Melvina
Alex. Roof	Norwalk
Tunnel City Creamery Co.	Tunnel City
Cashton Creamery Co.	Cashton
Elgin Creamery Co.	St. Mary's
Kendall Creamery Co.	Kendall
Leon Creamery Association	Leon
B. Drowatzky	Tomah
The Warrens Creamery Co.	Warrens
A. C. Cole & Son	Cataract
A. I. Sensee & Son	Cataract
Angelo Creamery Co.	Angelo
Wm. Huntzinger	St. Mary's
Elgin Creamery Co.	Cashton
J. J. Menn	Oil City

OCONTO COUNTY—

Little River Creamery	Oconto
Maple Valley Creamery Co.....	Maple Valley
Anson Eldred Co.	Stiles
John F. Schultz	Abrams
Lena Creamery Co. (Henry Grab)	Lena
Gillett Co-operative Co.	Gillett
John Theade	Brookside
Maple Valley Creamery Co.	Claywood

OUTAGAMIE COUNTY—

Welcome Creamery Co.	Welcome
Kaukauna Creamery Co.	Kaukauna
Bungert Creamery Co.	Bungert
Bear Creek Corners Creamery.....	Bear Creek
Welcome Creamery	Bear Creek
Aug. Gerlack	Apple Creek
John Cannon	Dale
Dale Cheese and Butter Co.	Dale
Koehn & Potter	Appleton
Dengler & Son	Appleton
Johnston's Creamery	Appleton
Peter Zomer	Appleton
Philip Greimer	Erb
L. Dabareiner & Co.	Hortonville
Hogaboom Bros.	Black Creek
Loubenhimer & Stein	Black Creek
Seymour Creamery Co.	Seymour
Black Creek Butter and Cheese Co.....	Black Creek
John W. Gruppe Butter & Cheese Co.....	Greenville
Chas. Baker	Seymour
H. Greb	Seymour
Black Creek Butter & Cheese Co.....	Black Creek
Theo. Marks	Black Creek

OZAUKEE COUNTY—

E. L. Eastman (Riverside Creamery)	Saukville
Arthur Beger	Kohler
George Minz	Kohler
Wm. Schoessow	Freistadt
Five Corners Creamery Co.	Cedarburg
John Paulus	Belgium
Nick. Knepper	Fredonia
Chas. Gerlach	Grafton
The Grafton Creamery Co.	Grafton

PEPIN COUNTY—

Plummer Mercantile Co.	Arkansas
Geo. Tarrant & Son (3 Factories).....	Tarrant
V. W. Dorwin Mill Co., Cheese and Creamery.....	Tarrant
George Tarrant & Son	Durand
W. V. Dorwin Mill Co.	Durand
Bear Creek Co-op. Creamery Co.	Durand

PIERCE COUNTY—

Martell Creamery Co.	Martell
Rock Elm Creamery Association	Rock Elm
Trimbelle Butter & Cheese Co.....	Trimbelle
Crescent Creamery Co.	Ellsworth
Johnson & Larson	River Falls
Rock Elm Butter & Cheese Ass'n.....	Exile

POLK COUNTY—

A. C. Roonholdt	Patterson
Cushing Co-operative Creamery	Cushing
H. J. Hjost	West Denmark
Balsam Lake Co-operative Creamery Co.	Balsam Lake
Clear Lake Co-operative Creamery Co.	Clear Lake
Wm. Kent & Co. Creamery	Osceola Mills
Hjort Bros.	West Sweden
Laketown Creamery	Alabama
W. Matteson & Son	Jensen
Atlas Creamery Co.	Atlas
Anthony Johnson and Co.	North Valley
Creamery	Richardson

PRICE COUNTY—

Christian Mayer	Phillips
-----------------------	----------

RACINE COUNTY—

McCanna, Frasier Co.	Waterford
McCanna, Frasier Co.	Caldwell
McCanna, Frasier Co.	Burlington
Burlington Farmers' Creamery	Burlington
Cyrus Benedict	Union Grove
McCanna, Frasier Co.	Kansasville
McCanna, Frasier Co.	Rochester
McCanna, Frasier Co.	Beaumont
Karney & Wurterling	Kneeland
Mt. Pleasant Butter Co.	Sylvania
W. V. Creamery	Sylvania
Spellum & Thompson	North Cape
Thompsonville Creamery	Thompsonville
Raymond Creamery Co.	Raymond
C. Otto	Union Grove
Clumlie Creamery	Union
Cyrus Benedict	Union Grove
N. Spartz	Union
Husher Creamery	Caledonia

RICHLAND COUNTY—

Carswell Bros.	Dixon
Martin & Harter	Richland Center
J. R. Mansfield	Richland Center
Henry Flemme	Richland Center
Sylvan Creamery Co.	Sylvan
Ithaca Union Cheese Co.	Ithaca
Richwood Creamery Co.	Westport
Bloom City Creamery Co.	Bloom City
Elgin Creamery Co.	Bear Valley
Andrew Harter	Lone Rock

ROCK COUNTY—

Courtland Lackner	Indian Ford
Chas. D. Fitch	Emerald Grove
M. C. Uehling	Shopiere
F. O. Uehling & Co.	Hanover
R. R. Carlston	Hanover
Eagle Creamery Co.	Fulton
Taylor & Marston	Beloit
Egbert Starr	Beloit
W. S. Thompson	Edgerton
Edgerton Creamery Co. (G. C. Mansfield & Co.) ..	Clinton
Elgin Creamery Co.	Clinton
Nora Creamery Co.	Clinton

ROCK COUNTY—Continued.

F. O. Uehling & Co.	Orfordville
E. H. Skinner	Orfordville
Wm. Brinkman	Afton
Tiffany Co-operative Creamery Ass'n.....	Tiffany
Rice & Carlson	Footville
Chas. Hatton	Footville
D. E. Wood & Co.	Magnolia
D. E. Wood & Co.	Cooksville
Conley & Conry.....	Fairfield
G. D. Hall	Johnstown Center
"Harmony"—J. C. Hohn, Prop.....	Janesville
"Janesville"—F. W. Boetcher, Prop.....	Janesville
"Willowdale"—E. Brinkman, Prop.	Janesville
La Prairie Creamery Co.	Janesville
Henry Schump	Milton
Godfrey & McComb	Lima Center
Kachel & Marlett	Whitewater
A. D. Conkey	Milton Junction
Geo. K. Nelson	Milton Junction
D. E. Wood & Co.	Evansville
Johnstown Creamery Co.	Johnstown
Fred Vankirk	Center
Sands & Co.	Clinton
I. J. Fletcher	Johnstown
Ehler Brinkman	Willowdale
Western Newark Creamery Co.	Newark

ST. CROIX COUNTY—

Rush River Creamery Co.	Baldwin
T. E. Hawkins	Baldwin
Roberts Creamery Co.	Baldwin
Roberts Creamery Co.	Wilson
Roberts Creamery & Cheese Co.	Roberts
C. F. Freeman & Co.	Roberts
James J. Graslie	New Centreville
Deer Park Co-operative Co.	Deer Park
Glenwood Creamery Co.	Glenwood
Otto Jensen Creamery Co.	Brookville
Cylon Creamery Co.	Cylon
Woodville Butter & Cheese Co.	Woodville
Star Prairie Creamery Co.	Star Prairie
Haugen & Grasslie	Palmer
Nels Lorenson	Brookville
Hill & Hawkins	Hammond
Graslie Creamery Co.	Hammond

SAUK COUNTY—

Troy and Honey Creek Factory.....	Wilton
Durward & Querhammer	Black Hawk
Sumpter Creamery Co.	Prairie du Sac
Wisconsin Co-operative Creamery Co.....	Sauk City
Riverside Creamery	Sauk City
Barker Bros.	Baraboo
W. P. Dennett	Reedsburg
Dell Sanborn	La Valle
Loganville Butter & Cheese Manufacturing Co.....	Loganville
Merrimack & Caledonia Creamery Co.....	Merrimack

SAUK COUNTY—Continued.

Co-operative Creamery Co.	Spring Green
Drew & Schmidt	Leland
J. E. Ward	Sandusky
Clover Creamery Co.	Sandusky
Sumpter Creamery Co.	King's Corners

SHAWANO COUNTY—

O. A. Risum	Pulcifer
Anton von Heimbürg	Bonduel
Anton von Heimbürg	Cecil

SHEBOYGAN COUNTY—

Garling & Co.	Glenbeulah
Wunch Bros.	Mosel
A. Suemnicht	Winooski
Andrus Bros.	Winooski
O'Connell Bros.	Beechwood
Haenenke Bros.	Cedar Grove
J. E. Doane	Cedar Grove
Dulmes & Kremmer	Oostburg
P. Spravgers	Oostburg
Lemkuel & Sufeling	Oostburg
J. P. Ehren	Oostburg
Jos. Lensen	Oostburg
William Reineck	Oostburg
O'Connell Bros.	Adell
Frank Bartzter	Sheboygan
Herbert Bliss	Sheboygan
C. H. Pape	Sheboygan
Sheboygan Milk Co.	Sheboygan
T. M. Champeny	Plymouth
C. H. Lencke	Plymouth
Wm. Skelton	Parnell
Geo. Krautkraemer	Franklin
C. F. G. Wernicke	Greenbush
Thos. Allan	Adell
Z. Holden	Sheboygan Falls
M. McKinnon	Sheboygan Falls
McGran & Evans	Sheboygan Falls
J. F. Mohri	Silver Creek

ST. CROIX COUNTY—

Rush River Creamery Co.	Palmer
Graslie & Bonninger New Creamery.	Hammond

TREMPEALEAU COUNTY—

Wernick & Hammer	Hillsboro
Ontario Creamery Ass'n	Ontario
C. M. Levis	Osseo
Arctic Springs Creamery Co.	Galesville
N. I. Gilbert	Eleva
Unity Co-operative Creamery Co.	Strun
P. Ekem	Pigeon Falls
Blair Trading Ass'n	Blair
W. G. Hyslop	Blair
Jno. Ziegler	Valley
Arcadia Creamery Co.	Arcadia
Independence Creamery Co.	Independence
Burnside Butter & Cheese Factory	Trempealeau
Whitehall Creamery Ass'n	Whitehall
Elk Creek Creamery Ass'n	Elk Creek
Dodge Creamery	Dodge

VERNON COUNTY—

Dilly Creamery Co.	Dilly
Coon Valley Creamery	Coon Valley
A. E. Elde	Chaseburg
Arbor Creamery Co.	Dilly
Thompson Bros. & Co.	Bristow
C. C. Olson	Bristow
Fortun Bros.	Bristow
Thompson Bros.	Purdy
Hoken, Anderson, Butter & Cheese	Westby
A. E. Mutch	Hillsboro
Wernick & Hammer	Hillsboro
C. V. Wernick	Hillsboro
John Warner	Ross
Ontario Creamery Ass'n	Ontario
Newton Creamery Co.	Newton
Elgin Creamery Co.	Westby
La Farge Creamery	La Farge

WALWORTH COUNTY—

J. Watts	Richmond
Wisconsin Butter & Cheese Co.	Millard
Farmers' Creamery Co.	Walworth
Columbia Creamery Co.	Allen's Grove
Harris & West	Darien
Wisconsin Butter & Cheese Co.	Fayetteville
Conley & Conroy	Darien
Alvin Stone	Darien
Union Produce Co.	Whitewater
C. R. Gibbs	Whitewater
H. Judke	Whitewater
John Kachel Co., Creamery and Cheese	Whitewater
George Cowles	Whitewater
C. Q. Bench	Whitewater
Thos. Dryer Cheese Factory and Creamery	Whitewater
Harvey Godfrey	Whitewater
Clover Valley Creamery Co.	Whitewater
J. P. Galloway	Whitewater
Elkhorn Dairy Co.	Elkhorn
Wisconsin Butter & Cheese Co.	Elkhorn
Lake Town Creamery	Elkhorn
South Sugar Creek, Butter & Cheese	Elkhorn
East Troy Co-operative Butter & Cheese Ass'n	Hilburn
Adams Butter & Cheese Co.	Adams
Co-operative Troy Creamery Co.	Mayhew
Silver Lake Creamery Co.	Tibbets
Oatman Bros.	Spring Prairie
Hilburn Creamery Co.	Lake Buelah
McCanna & Frasier	Lake Buelah
Metlowee Butter Co.	East Delavan
East Delavan Creamery Co.	East Delavan
Murphy & Wenkeman	East Delavan
Honey Creek Co-operative Creamery	Honey Creek
McCanna, Frasier & Co.	Honey Creek
Spring Creek Creamery Ass'n	Bissell
Oatman Bros.	Genoa Junction
J. B. Vosburg	Genoa Junction
Elgin Butter Co.	Genoa Junction
Lake View Creamery Co.	Lake Geneva
North Bloomfield Farmers' Factory	Lake Geneva
Maple Ridge Creamery	Lake Geneva
Kayes Park Creamery Co.	Lake Geneva
Geneva Center Creamery	Como

WALWORTH COUNTY—Continued.

Meltowe Butter Factory—Island	Delavan
Delavan Prairie Co-operative Creamery.....	Delavan
H. Marr	La Grange
La Grange Butter and Cheese Factory.....	La Grange
Harris Bros.	Troy Center
Oatman Bros.	Springfield
Wisconsin Butter & Cheese Factory	Springfield
McAdam Bros.	East Troy
East Troy Butter & Cheese Ass'n.....	East Troy
Troy Cheese & Creamery Ass'n.....	Troy
Newhall Bros.	Richmond
Elgin Dairy Co.	Sharon
Sharon Dairy Co.	Sharon
C. H. Stubbs	Lyons

WASHINGTON COUNTY—

Boltonville S. & C. Association	Boltonville
M. N. Gehl	South Germantown
Dow Maxon & Co.	Schleisingserville
L. Rosenheimer	Kewaskum
West Bend Creamery Co.	West Bend
Jackson Butter & Cheese Co.....	Jackson
Dow Maxon	Cedar Creek
J. B. A. Kern & Son.....	Allentown
John Replinger & Co.	Allentown
M. Stoffel	Rio
Gilt Edge Butter Co.	Barton
Newburg Creamery Co.	Newburg
Jackson Butter & Cheese Co.	Kirchhain
Thompson Creamery	Thompson
J. L. Bertscher	Clear Lake
Michael Gehl	Aurora

WAUKESHA COUNTY—

C. J. Bente	Golden Lake
Menomonee Fall Co-operative Creamery Co.....	Menomonee Falls
Harris Bros.	Calhoun
Prince of Wales Creamery	Wales
Wisconsin Butter & Cheese Co.	Mukwonago
Perry Schuchart	Merton
T. M. Champeny	Monches
Hartland Creamery	Hartland
Saylesville Creamery	Genessee
North Prairie Butter and Cheese Co.....	North Prairie
Delafield Co-operative Creamery Co.....	Delafield
Marcy Elgin Co.....	Marcy
Claser & Claser	Marcy
Roach & Seeber.....	Summit Center
Herman Bente	Summit Center
Miller & Zahn	Summit Center
H. Dames	Monterey
Wisconsin Butter and Cheese Co.....	Vernon
Vernon Co-operative Factory	Vernon
T. M. Champeny	Sussex
Wisconsin Butter and Cheese Co.....	Waukesha
Wm. Miller & Co.....	Dousman
Flynn & Whelan	Merton
Wm. Miller	Waterville
Pewaukee Creamery Co.....	Pewaukee
T. M. Champeny	Colgate
Chris. Glans, Creamery and Hand Cheese.....	Tess Corners
Vernon Co-operative Creamery	Prospect

WAUKESHA COUNTY—Continued.

McCanna & Frasier Co.....	Prospect
McCanna's Butter and Cheese Factory.....	Big Bend
Ottawa Co-operative Cheese and Butter Co.....	Ottawa
H. J. Roberts.....	Oconomowoc
H. C. Patrick.....	Oconomowoc
Summit Creamery.....	Oconomowoc
Muskego Creamery.....	Burlington

WAUPACA COUNTY—

Spring Lake Co-operative Creamery Association.....	Waupaca
Ed. R. Traeger.....	Clintonville
Baldwin Creamery Co.....	Weyauwega

WAUSHARA COUNTY—

Eureka Creamery Co.....	Borth
D. J. Jenne & Son.....	Auroraville
Crystal Fountain Creamery.....	Auroraville
Fountain Valley Creamery.....	Auroraville
Ruly Heale Bros.....	Auroraville
Poysippi Creamery Co.....	Poysippi
D. J. Jenne & Co.....	Fargoville
Plainfield Butter Factory.....	Plainfield
Pine River Dairy Association.....	Auroraville
C. S. Walter, Butter and Cheese.....	Brushville
Star Creamery Co.....	Tustin
Ernest Mathews.....	Terrill
Hale Bros.....	Terrill
Poysippi Creamery.....	Poysippi

WINNEBAGO COUNTY—

Allenville Spring Creamery Co.....	Allenville
Rush Lake Creamery Co.....	Rush Lake
Chas. Lambert.....	Pickett
Lambert & Scoulan.....	Fisk
Eureka Creamery.....	Oshkosh
C. Natteman.....	Oshkosh
Koro Co-operative Creamery Co.....	Koro
Floral Creamery Association.....	Zion
Floral Co-operative Creamery.....	Waukan
Floral Creamery.....	Omro
Oak Hill Creamery Co.....	Larsen
Guss Kreptke.....	Neenah
Wm. M. Robinson.....	Neenah
J. W. Jeffers.....	Winneconne
Chris. Velte.....	Zitlan

WOOD COUNTY—

Hiles Bros.....	Dexterville
M. A. Sickels & Co.....	Pittsville
Grand Rapids Creamery.....	Smyrna
Hewitt Co-operative Creamery Co.....	Hewitt
Farmer's Creamery Co.....	Grand Rapids

MICHIGAN SUPREME COURT OPINION.

PEOPLE VS. THE WORDEN GROCER CO. FILED DECEMBER 6, 1898.

LONG, J. The complaint in this case charges that the defendant: "On February 5, 1898, did unlawfully sell and deliver to John T. Owen, of Benton Harbor, Michigan, a large quantity, to-wit: One barrel of vinegar which was not then and there in compliance with the provisions of act No. 71, Public Acts of 1897, in this, viz.: That said vinegar was sold as fermented cider vinegar, and branded as such; that said vinegar contained less than one and three-fourths per cent. by weight, upon full evaporation (at the temperature of boiling water) of solids contained in the fruit from which said vinegar is fermented, to-wit: One and fifty one-hundredths per cent. of solids; and said vinegar contained less than two and a half-tenths of one per cent. ash or mineral matter, the same being the product of the material from which said vinegar was manufactured, to-wit: eight one-hundredths of one per cent. of ash or mineral matter, against the form of the statute in such case made and provided," etc.

The cause was commenced in the police court, and, being removed to the circuit, came on to be heard before a jury. The defendant refused to plead, and counsel for defendant thereupon made a motion to quash the complaint and summons for several reasons, which will be hereafter discussed. The court upon the trial directed a verdict of guilty, and the cause comes to this court by writ of error.

The title of the act reads: "An act in relation to the manufacture and sale of vinegar, and to repeal act No. 224 of the Public Acts of 1889, approved," etc. Sections one and two of the act, being the sections in question, provide:

"Section 1. The People of the State of Michigan enact: That "no person shall manufacture for sale, offer or expose for sale, sell or deliver, or have in his possession with intent to sell or deliver, any vinegar not in compliance with the provisions of this act. No vinegar shall be sold as apple, orchard or cider vinegar which is not the legitimate product of pure apple juice, known as apple cider or vinegar not made exclusively of said apple cider or vinegar into which foreign substance, drugs or acids have been introduced, as may appear upon proper tests, and upon said test, shall contain not less than one and three-fourths per cent., by weight, of cider vinegar solids upon full evaporation at the temperature of boiling water.

"Section 2. All vinegar made by fermentation and oxidation without the intervention of distillation, shall be branded 'fermented vinegar,' with the name of the fruit or substance from which the same is made. And all vinegar made wholly or in part from distilled liquor shall be branded 'distilled vinegar,' and all of such distilled vinegar shall be free from coloring matter added during or after distillation, and from color other than imparted to it by distillation. And all fermented vinegar not distilled shall contain not less than one and three-fourths per cent., by weight, upon full evaporation (at the temperature of boiling water) of solids, contained in the fruit or grain from which said vinegar is fermented, and said vinegar shall contain not less than two and a half-tenths of one per cent. ash or mineral matter, the same being the product of the material from which said vinegar is manufactured. And all vinegar shall be made wholly from the fruit or grain from which it purports to be or is represented to be made, and shall contain no foreign substance, and shall contain not less than four per cent., by weight, of absolute acetic acid."

It appears by the testimony that the defendant, a Michigan corporation doing business at Grand Rapids, on February 5, 1898, sold a barrel of vinegar to one John T. Owen, of Benton Harbor. The sale is admitted. A sample of the vinegar

was taken from this barrel and analyzed by the state analyst, Mr. Fred A. Borrodale. The correctness of this analysis is not disputed. This analysis showed that the vinegar did not comply with the requirements of the statute, in that it did not contain the amount of solids nor the amount of ash or mineral matter required.

The contentions made by the counsel for defendant mostly relate to the validity of the act.

1. It is contended that the title to the act does not express any object; that the act was intended to prevent deception in the sale of vinegar, or to prevent adulteration of vinegar, but that no such object is expressed in the title; and that the title is therefore in conflict with section 20, article 4, of the constitution of this state, which provides that: "No law shall embrace more than one object, which shall be expressed in its title."

We think this contention is sufficiently answered by what was said by this court in *Soukup v. Van Dyke*, 109 Mich., 681. There the title was: "An act relative to justice courts in the city of Grand Rapids." It was said: "The title is sufficient if it fairly and reasonably announces the object, and that it is a single one. If this requirement be observed, the legislature must determine for itself how broad and comprehensive shall be the object of a statute, and how much particularity shall be employed in the title in defining it."

In *People v. Kelly*, 99 Mich., 82, the title under discussion was: "An act relative to disorderly persons, and to repeal," etc. See also:

State v. County Judges, 2 Iowa, 281.

McAulich v. The Miss. & Mo. R. R. Co., 20 Iowa, 342.

2. Counsel contends that the complaint being drawn under section 2 of the act, no conviction can follow; that if any violation of the law be found, it is of section 1, and not of section 2 of the act; that therefore the complaint was drawn under the wrong section.

This contention cannot be sustained. It is plain from the reading of these sections that the legislature intended that all fermented vinegar should come up to the required standard, whether made from fruit or grain.

3. The defendant contends that the act is unreasonable, and therefore void as beyond the police power of the state, in that the test for cider vinegar in regard to solids is arbitrary, unscientific and not calculated to accomplish the end sought by the legislature, viz: To protect the public health against spurious vinegar; that such test is no test, because:

(a.) Said solids and ash are indefinite ingredients of vinegar from a hygienic standpoint.

(b.) Their comparative absence or presence is not an essential ingredient of pure apple cider vinegar.

(c.) A vinegar can be manufactured which will satisfy the requirements of the statute and yet contain no materials from apples or the product of apples.

(d.) A pure apple cider vinegar is frequently made which is below the requirements of the statute in solids and ash.

(e.) The less proportion of solids is a proof of greater purity in the vinegar and of its better keeping qualities.

These questions might very properly be addressed to the legislature, but are matters with which the court has nothing to do. It is not a part of the functions of the court to investigate the facts entering into questions of public policy merely. Under our system that power is lodged in the legislative branch of the government. It belongs to that branch to determine primarily what measures are appropriate or needful for the protection of the public morals, the public health or the public safety.

Barton v. McWhinney, 85 Ind., 481;

Mugler v. Kansas, 123 U. S., 660;

Com. v. Powell, 127 U. S., 685.

In *People v. Snowberger*, 71 N. W. R., 499, it was said by this court: "The act may work hardship in many cases, but the question is one to be addressed to the legislature—not to the court."

The question of the reasonableness of the acts found in many states relative to the sale of milk below a certain standard has been frequently raised in the courts, and the acts upheld.

In *Com. v. Evans*, 132 Mass., 11, the court passing upon such a statute said: "The intention of the legislature and the practical operation of this section

in connection with the third section is to provide that it shall be unlawful to sell milk containing not less than thirteen per cent. of milk solids. This belongs to the class of police regulations designated to prevent fraud and to protect the health of the people which is within the constitutional power of the legislature to enact."

In *State v. Smyth*, 14 R. I., 100, the court said: "It was the purpose of the statute to prohibit, not only the dealing in milk which had been adulterated, but also in milk of such an inferior quality as to fall below the standard named in section three. It is equally a fraud upon the buyer, whether the milk which he buys was originally good and has been deteriorated by the addition of water, or whether in its natural state it is so poor as to contain the same proportion of water as that which has been adulterated." See also:

State v. Newton, 45 N. J. L., 469;

Bertholf v. O'Reilly, 74 N. Y., 509;

State v. Campbell, 64 N. H., 403.

But counsel contends that the reasonableness of this act is a question of fact for the jury to determine from the expert chemical evidence.

This question is neither for the court nor the jury to determine. In *People v. Cipperly*, 101 N. Y., 634, that very question was discussed and decided adversely to the claim here. It was said: "The defendant takes the broader ground that the legislature cannot, under the constitution, prohibit the sale of milk 'drawn from healthy cows which in its natural state falls below the standard fixed by the act, unless such milk or the articles made from it are in fact unwholesome or dangerous to the public health. How is that question of fact to be determined? The court cannot take judicial notice whether the milk below the standard is or is not unwholesome or dangerous to the public health. Is that to be a question for the jury? If so, the court must charge a jury in each case that if they find milk below that standard to be unwholesome, then the statute is unconstitutional. Evidently the constitutional question cannot be settled, or rather settled in that way. The constitutionality would vary with the varying judgment of jurors.

In the emery wheel case before us, in *People v. Smith*, 108 Mich., p. 534, a somewhat similar question was discussed. It was said: "If the court find the plain provisions of the constitution violated, or if it can be said that the act is not within the rule of necessity in view of facts of which judicial notice may be taken, then the act must fall; otherwise it should stand." See also:

People v. Girard, 145 N. Y., p. 109.

Counsel also contends that defendant was not allowed, nor could it obtain, a sample of the vinegar in question for analysis, and was deprived of the right to produce evidence as to the amount of solids in the vinegar; and was thus deprived of property without due process of law.

The record shows that the defendant was not prevented from getting a sample of the vinegar by any person interested in the prosecution of the suit. The records show that the only effort it made to get such sample was a letter written to Mr. Owen, who had bought and paid for the vinegar, requesting him to return it, to which the defendant received no reply; and it does not appear that Mr. Owen had any of the vinegar left at that time. No sample was left with the defendant by the prosecution; nor was this necessary.

Com. v. Coleman, 157 Mass., 460.

This statute forbids the manufacture and sale of vinegar not in compliance therewith; and persons manufacturing or selling vinegar below the standard do so at their peril. It is no defense that the person so manufacturing or selling vinegar below the standard has no knowledge that it is not within the standard prescribed.

People v. Snowberger, 71 N. W. R., 497.

We have examined the other questions raised, but do not deem it necessary to discuss them. They relate mostly to offers of testimony which the court below ruled out; and, we think, properly.

The testimony was uncontradicted that the vinegar sold was not in compliance with the statute. The sale was admitted.

The court was not in error in directing the verdict. The conviction must be affirmed.

Grant, C. J., did not sit.

The other justices concurred.

ABSTRACT OF THE DAIRY AND FOOD LAWS OF THE UNITED STATES.

The following abstract of the dairy and food laws of the United States, and of the several states, was made by the dairy division of the Department of Agriculture at Washington, and is reprinted as being of interest to all friends of pure food legislation, and of value to all in authority in this state who are charged with the enactment and execution of laws of this character.

In the following abstracts it is aimed to state briefly the principal features of the dairy laws, omitting matters of minor interest, as references to penalties, details of enforcement, disposition of fines, etc.

States having dairy commissioners or other officers specially charged with the enforcement of dairy laws, usually give such officers necessary authority for securing evidence, having analyses made, and conducting prosecutions; it is also customary to allow them necessary traveling expenses in addition to the regular salary.

When a subject is followed by the words "No law" it should be understood there is no *special* law on that subject. It may, however, be covered by a pure-food law, an abstract of which is given in another place.

UNITED STATES.

MILK.—Import duty on fresh milk, 2 cents per gallon. *Condensed Milk.*—Import duty on preserved, condensed, or sterilized milk, 2 cents per pound.

BUTTER.—Butter is defined as the food product usually known as butter and made exclusively from milk or cream, with or without salt or color. Import duty, 6 cents per pound.

CHEESE.—Cheese is defined as the food product known as cheese and made exclusively from milk or cream, with or without coloring matter. Import duty, 6 cents per pound.

OLEOMARGARINE AND FILLED CHEESE.—Special taxes are imposed upon manufacturers, wholesale dealers, and retail dealers. Each original package must bear a prescribed label. Regulations concerning reports, etc., of manufacturers and branding of all packages not provided for by the law are made by the commissioner of internal revenue. *Oleomargarine.*—Oleomargarine is defined as certain (enumerated) manufactured substances, extracts, mixtures, and compounds, including such mixtures and compounds with butter, made in imitation of butter and intended to be sold for butter. Taxed 2 cents per pound. Import duty 6 cents, and internal-revenue tax on imported oleomargarine, 15 cents per pound. *Filled Cheese.*—Filled cheese is defined as substances made from milk or skimmed milk with admixture of butter, oils, or compounds foreign to such milk, and made in imitation of cheese. Taxed 1 cent per pound. Import duty, 6 cents, and internal-revenue tax on imported filled cheese, 8 cents per pound. Original packages shall be plainly branded "Filled cheese," and signs must be displayed where sales are made.

MISCELLANEOUS.—Import duty on sugar of milk, 5 cents per pound.

ALABAMA.

MILK.—(No law.)

BUTTER.—(No law.)

CHEESE.—(No law.)

IMITATION BUTTER.—No article which is in imitation of pure yellow butter and is not made wholly from pure milk and cream shall be manufactured, sold, or

used in any public eating place, hospital, or penal institution, etc.; but oleomargarine, free from color or other ingredient to cause it to look like butter, and made in such manner as will advise the consumer of its real character, is permitted. It must be stamped with its name.

IMITATION CHEESE.—(No law.)

MISCELLANEOUS.—(No law.)

ARIZONA.

(No dairy laws.)

ARKANSAS.

MILK.—(No law.)

BUTTER.—Butter is defined as a product manufactured exclusively from milk and cream.

CHEESE.—(No law.)

IMITATION BUTTER.—Substitutes for butter, whether in wholesale or retail packages, shall be plainly labeled "Adulterated butter," "Oleomargarine," or such other name as shall properly describe them. In hotels, etc., dishes containing said articles must be plainly marked in same manner.

IMITATION CHEESE.—(No law.)

MISCELLANEOUS.—(No law.)

CALIFORNIA.

DAIRY BUREAU.—Three resident citizens, experienced in manufacture of dairy produce, constitute a state dairy bureau. Period of office four years; no compensation. Issue and record cheese brands. Their agent receives \$1,200 salary and is allowed assistants and chemists when necessary. Annual appropriation for bureau, \$5,000.

MILK.—(No law.)

BUTTER.—Roll butter when sold must be full weight.

CHEESE.—All cheese must be branded "California full cream cheese," if it is made from pure whole milk and contains at least 30 per cent. fat; "California half-skim cheese," if made from pure milk and has at least 15 per cent. fat; "California skim cheese," if made from pure skim milk. Fancy cheeses are excepted.

IMITATION BUTTER AND CHEESE.—Imitation butter and cheese is defined as any article not produced from pure milk or cream, salt, rennet, and harmless coloring matter, which is in semblance of butter or cheese and designed as a substitute for such. Shall not be colored to imitate butter or cheese, and must be in such form as will advise consumer of its real character. Every package must be plainly marked "Substitute for butter," or "Substitute for cheese," and accompanied by a statement giving name of manufacturer, ingredients, etc., a copy of which must be given to each purchaser, with verbal notice, at the time of sale, in connection with which words like "creamery," "dairy," etc., are prohibited. Patrons of eating places shall be notified if substitutes of butter or cheese are used. Prohibited in state charitable institutions.

MISCELLANEOUS.—(No law.)

COLORADO.

DAIRY COMMISSIONER.—The dairy commissioner, appointed by the governor, shall be a practicable dairyman; period of office, two years; salary, \$1,200. May employ a deputy at salary of \$1,000 per year and a chemist at \$10 per day. Issues cheese brands. State appropriation \$2,000 per annum for 1895 and 1896.

MILK.—(No law.)

BUTTER.—(No law.)

CHEESE.—All cheese must be branded "Colorado full cream cheese," if not less than 35 per cent. of total solids consists of butter fat; all containing less than this amount of fat, "Skim cheese."

IMITATION BUTTER AND CHEESE.—All articles not produced from pure milk or cream, in imitation of pure cheese or yellow butter, are prohibited; but oleo-

margarine and filled cheese are permitted if free from color or other ingredient to cause them to look like butter or cheese; they must be made in such form and sold in such manner as will advise the consumer of their real character. Cheese containing any foreign fats, oleaginous substances, rancid butter, etc., shall be branded "Imitation cheese."

MISCELLANEOUS.—(No law.)

CONNECTICUT.

DAIRY COMMISSIONER.—The dairy commissioner is appointed by the governor; period of office, two years; salary, \$1,500 per year. He may appoint a deputy at salary of \$1,200 per year. Issues signs to dealers in imitation butter. Office expenses limited to \$900 per year. Two thousand five hundred dollars annually appropriated to the Connecticut Agricultural Experiment Station to carry out the provisions of the pure-food act.

MILK.—The Connecticut Agricultural Experiment Station may fix standard. *Skimmed milk*.—Skimmed milk must be plainly labeled. *Adulterated milk*.—The sale or delivery of adulterated, tainted, or diseased milk to a butter or cheese factory is prohibited.

BUTTER.—Tub butter in prints, pats, etc., must be labeled "Tub butter."

CHEESE.—(No law.)

IMITATION BUTTER.—Imitation butter, defined as any article resembling butter in appearance and not made wholly, salt and coloring matter excepted, from cow's milk, is prohibited; but oleomargarine or imitation butter, free from color or other ingredient to cause it to look like butter, and made in such form and sold in such manner as will advise consumer of its real character, is permitted. Words like "butter," "dairy," etc., shall not form a part of its name or appear on its package. Imitation butter shall be sold only in labeled packages, or registered places which display signs, and purchasers shall be informed orally of the character of the article at the time of sale. Use of imitation butter in public eating places, bakeries, etc., must be made known by signs.

IMITATION CHEESE.—(No law.)

MISCELLANEOUS.—(No law.)

PURE FOOD.—Any article of food or drink is deemed adulterated if any inferior or injurious substance has been added to it, if any valuable constituent has been removed, if it is an imitation of or sold as another article, if it is colored to conceal inferiority, if it contains any preservative not known to the purchaser, if it is decomposed or diseased, or the product of a diseased animal, etc., with certain exceptions, such articles are prohibited.

DELAWARE.

MILK.—(No law.)

BUTTER.—(No law.)

CHEESE.—(No law.)

IMITATION BUTTER AND CHEESE.—The manufacture or sale of any article not produced from unadulterated milk or cream, which is in imitation of pure yellow butter or designed to take the place of pure cheese, is prohibited; but oleomargarine is permitted if in a distinct form, free from butter color and sold in such manner as to show its real character; it shall be plainly marked "Oleomargarine."

MISCELLANEOUS.—(No law.)

DISTRICT OF COLUMBIA.

MILK.—Milk standard, 9 per cent. solids not fat, 3½ per cent. fat. Permit to sell milk must be obtained from health officer. *Skimmed milk*.—Skim milk standard, 9.3 per cent. total solids. Must be plainly marked "Skim milk." *Adulterated milk*.—Diseased and unwholesome milk is prohibited. *Cream*.—Cream standard, 20 per cent. fat.

BUTTER AND CHEESE.—Butter and cheese shall be made exclusively of milk or

cream, with or without common salt. Butter standard, 83 per cent. fat and not more than 12 per cent. water or 5 per cent. salt.

IMITATION BUTTER AND CHEESE.—Substances in semblance of butter or cheese, not made exclusively of milk or cream, but with the addition of melted butter or any oil, shall be plainly branded on each package "Oleomargarine," and a label, similarly printed, must accompany each retail sale.

MISCELLANEOUS.—Health officer's regulations govern dairies and sale of milk.

PURE FOOD.—Any food or drink is deemed adulterated if any inferior or injurious substance has been mixed with it, if any valuable constituent has been removed, if it is an imitation of or sold as another article, if it is decomposed or diseased, if it is colored to conceal inferiority, etc.; with certain exceptions, which shall be made known to the purchaser, such articles are prohibited.

FLORIDA.

MILK.—(No law.)

BUTTER.—(No law.)

CHEESE.—(No law.)

MILK.—(No law.)

MILK.—(No law.)

IMITATION BUTTER.—The sale of any spurious preparation, purporting to be butter, is prohibited. Guests at hotels, etc., must be notified if oleomargarine or other spurious butter is used.

IMITATION CHEESE.—(No law.)

GEORGIA.

MILK.—Milk standard, 3½ per cent. fat, 8½ per cent. solids not fat. *Skimmed milk.*—Skimmed milk is defined as milk below the standard. *Adulterated milk.*—The sale of adulterated, impure, or diseased milk is prohibited.

BUTTER.—(No law.)

CHEESE.—(No law.)

IMITATION BUTTER AND CHEESE.—Imitation butter and cheese are defined as any article not produced from pure milk or cream—salt, rennet, and coloring matter excepted—in semblance of butter or cheese and designated to be used as a substitute for either. Shall not be colored to resemble butter or cheese. Every package must be plainly marked "Substitute for butter" or "Substitute for cheese," and each sale shall be accompanied by verbal notice and by a printed statement that the article is an imitation, the statement giving also the name of the producer. The use of these imitations in eating places, bakeries, etc., must be made known by signs.

MISCELLANEOUS.—(No law.)

IDAHO.

MILK.—(No law.)

BUTTER.—(No law.)

CHEESE.—(No law.)

IMITATION BUTTER.—Brand required for sale of oleomargarine or butterine, imitation butter, or mixture imitating butter. These shall not be sold as butter.

IMITATION CHEESE.—(No law.)

MISCELLANEOUS.—(No law.)

PURE FOOD.—The adulteration of any article of food or drink with fraudulent intent, or sale of same as unadulterated, is a misdemeanor.

ILLINOIS.

MILK.—Cans and vehicles used in the retail trade of milk shall be marked with the dealer's name and the locality whence milk comes. *Skimmed milk.*—Skimmed milk may be sold as such, and each can or vessel shall be plainly marked "Skimmed milk." *Adulterated milk.*—The sale of adulterated or diseased milk, or its delivery to a factory, is prohibited. Adulteration after

delivery to a factory is a misdemeanor. *Condensed milk.*—The addition of sugar to condensed milk is permitted.

BUTTER.—(No law.)

CHEESE.—(No law.)

IMITATION BUTTER.—Imitation butter is defined as any article not produced from pure milk or cream—salt, rennet, and coloring matter excepted—in semblance of butter and designed to be used as a substitute for it. Shall not be colored to resemble butter. All packages must be plainly branded "Oleo-margarine," "Butterine," "Substitute for butter," or "Imitation butter." Each sale shall be accompanied by notice to the purchaser that the substance is imitation butter.

IMITATION CHEESE.—Imitation cheese must be distinctly marked with the true and appropriate name of the article, and label bearing such name must be delivered with same when sold.

MISCELLANEOUS.—Care and food of dairy cows regulated. Co-operative creameries and butter factories shall give bond in the penal sum of \$6,000 and keep a monthly report of their operations posted conspicuously in factory for the inspection of patrons. The state's attorney is charged with the law relating to "Substitutes for butter."

INDIANA.

MILK.—*Adulterated milk.*—The sale of adulterated, diseased, etc., milk to anyone or its delivery to a factory is prohibited.

BUTTER AND CHEESE.—The use of poisonous or deleterious substances in the manufacture of butter and cheese is prohibited.

IMITATION BUTTER.—Butter other than that made from pure milk, when sold or used in hotels, etc., must be plainly labeled "oleomargarine."

IMITATION CHEESE.—(No law.)

MISCELLANEOUS.—(No law.)

IOWA.

DAIRY COMMISSIONER.—The dairy commissioner is appointed by the governor; shall have practical knowledge of dairying; term of office, two years; salary, \$1,500 per annum, shall give bond for \$10,000. He may employ clerical help at \$75 per month and an agent at \$3 per day in each city of over 10,000 inhabitants to collect milk samples; shall issue permits to milk dealers and keep a record of same; shall furnish certified test bottles to creameries. In addition to the regular appropriation, an appropriation of \$3,900 is made for the conduct of the office.

MILK.—Milk standard, 12½ per cent. solids, 3 per cent. fat. Milk dealers in cities shall register with the dairy commissioner and receive permits from him. *Skimmed milk.*—Skimmed milk may be sold as such. *Cream.*—Standard 15 per cent. fat... *Adulterated milk.*—The sale of adulterated, unwholesome, and diseased milk, or delivery to a factory, is prohibited.

BUTTER.—(No law.)

CHEESE.—*Skimmed milk cheese.*—Skimmed milk cheese shall be plainly marked.

IMITATION BUTTER AND CHEESE.—Imitation butter or cheese is defined as any article not produced from pure milk or cream—salt, rennet, and coloring matter excepted—in semblance of butter or cheese and designed to be sold as a substitute for either of them. Shall not be colored to resemble butter or cheese. Every package shall be plainly marked "Substitute for butter," or "Substitute for cheese," and each sale shall be accompanied by a verbal notice and by a printed statement that the article is an imitation, the statement giving also the address of the maker. The use of these imitations in hotels, bakeries, etc., must be made known by signs.

MISCELLANEOUS.—Tests of milk in factories, etc., must be accurate. Persons engaged in dairying shall keep their premises in hygienic condition and shall report statistics, etc., to the dairy commissioner. Care of cows is regulated.

KANSAS.

MILK.—*Adulterated milk.*—The sale of adulterated, skimmed, tainted, or diseased milk, or its delivery to any butter or cheese factory, is prohibited.

BUTTER.—(No law.)

CHEESE.—(No law.)

IMITATION BUTTER.—(No law.)

IMITATION CHEESE.—(No law.)

MISCELLANEOUS.—(No law.)

PURE FOOD.—Any article of food or drink is deemed adulterated if any injurious or inferior substance has been added to it, if any valuable constituent has been removed, if it is an imitation of or sold as another article, if it is diseased or tainted, if it is colored to conceal inferiority. With certain exceptions, which must be plainly labeled, such articles are prohibited.

KENTUCKY.

MILK.—*Skimmed milk.*—Skimmed milk shall not be sold with intent to defraud. *Adulterated milk.*—Adulterated milk, or milk from a diseased animal or an animal fed on "brewers' slop," etc., shall not be sold or used in the manufacture of butter or cheese.

BUTTER.—(No law.)

CHEESE.—(No law.)

IMITATION BUTTER.—Oleomargarine, butterine, or kindred compound, made in such form and sold in such manner as will advise the customer of its real character, and free from color or other ingredient to cause it to look like butter, is permitted.

MISCELLANEOUS.—(No law.)

IMITATION CHEESE.—(No law.)

PURE FOOD.—An article of food or drink is deemed adulterated if any inferior or injurious article has been added to it, if it is an imitation of or sold as another article, if it is colored to conceal inferiority, if it is diseased or decomposed, etc. Such articles are prohibited. Inspections and analyses are made under the supervision of the Kentucky Experiment Station. Falsely branding products to be sold is prohibited.

LOUISIANA.

MILK.—(No law.)

BUTTER.—(No law.)

CHEESE.—(No law.)

IMITATION BUTTER.—Such substances as oleomargarine, butterine, bogus butter, etc., shall be plainly labeled to indicate their composition. They shall not be sold as butter.

IMITATION CHEESE.—(No law.)

MISCELLANEOUS.—(No law.)

MAINE.

MILK.—Milk standard, 12 per cent. solids, 3 per cent. fat. *Skimmed milk.*—Skimmed milk must not be sold as pure milk. *Adulterated milk.*—Sale of adulterated and diseased milk, and that from cows fed on distillery or brewery refuse, etc., is prohibited.

BUTTER AND CHEESE.—Butter and cheese are defined as the products usually so called, and manufactured exclusively from milk or cream, with salt and rennet, and with or without coloring matter.

IMITATION BUTTER AND CHEESE.—Any article in imitation of yellow butter or cheese and not made exclusively of milk or cream is prohibited.

MISCELLANEOUS.—All glassware used for testing milk delivered at factories must be tested for accuracy under the direction of the director of the experiment station. Specific gravity of sulphuric acid used in testing milk or cream

must be at least 1.82. Persons using the Babcock test for apportioning the value of milk or cream must hold a certificate from the superintendent of the dairy school of the State College of Agriculture.

Milk inspectors shall be appointed in towns of more than 3,000 inhabitants, and may be appointed in smaller towns. They are given special powers for making inspections, and are required to keep a record of the names and addresses of all dealers.

MARYLAND.

MILK.—(No law.)

BUTTER.—(No law.)

CHEESE.—Cheese made from pure skimmed milk is permitted.

IMITATION BUTTER AND CHEESE.—The manufacture, sale, or use in public eating places of any article in imitation of and designed to take the place of pure butter or cheese, and not made wholly from milk or cream, is prohibited. Mixtures of any animal fats or animal or vegetable oils with milk, cream, or butter shall be uncolored, and marked with names and percentages of adulterants, and this information shall be given to purchasers.

MISCELLANEOUS.—The mayor and city council of Baltimore shall make regulations for the sale, and provide by ordinance for the inspection, of milk and food products; shall provide for and fix compensation of inspectors and analysts.

State Board of Health is given special powers and assistance to detect and expose adulterations and corruptions of foods and to conduct prosecutions. Two thousand five hundred dollars is annually appropriated for making chemical and scientific examinations of suspected foods and drinks.

PURE FOOD.—Diseased, corrupted, or unwholesome milk or other foods shall not be sold. Mixing or coloring any article of food or drink with any ingredient for gain, unless some is handled under its true name and its package is plainly marked, etc., is prohibited.

MASSACHUSETTS.

DAIRY BUREAU.—The governor shall appoint three members of the board of agriculture to constitute a dairy bureau; term of office, three years; compensation, \$5 per day of actual service. Secretary of board is executive officer of the bureau, and receives therefor \$500 per annum in addition to salary from board. Governor may appoint an assistant to the secretary; salary, \$1,200 per annum. Agents, assistants, experts, etc., may be employed when necessary. Expenditures limited to \$7,000 a year.

MILK.—Milk standard in April, May, June, July and August, 12 per cent. total solids—9 per cent. solids not fat, 3 per cent. fat; in other months, 13 per cent. total solids—9.3 per cent. solids not fat, 3.7 per cent. fat. Milk dealers are registered and peddlers are licensed. *Skimmed milk*.—Skimmed milk includes that below the standard for pure milk. It must contain at least 9.3 per cent. solids not fat, and be plainly marked "Skimmed milk." *Condensed milk*.—Condensed milk must be labeled with name of manufacturer; if in hermetically sealed packages, brand and contents must be given. *Adulterated milk*. The sale of adulterated, diseased, or poor milk or its delivery is prohibited. Convictions for selling adulterated milk are advertised in the newspapers.

BUTTER AND CHEESE.—For the purpose of an early act, butter and cheese are defined as products usually known by these names and made exclusively from milk or cream, with salt or rennet, and with or without coloring matter.

IMITATION BUTTER.—An article made wholly or partly out of any fat or oil, etc., not from pure milk or cream, and which is in imitation of yellow butter, is prohibited; but oleomargarine, free from color or other ingredient to cause it to look like butter, and made in such form and sold in such manner as will advise the consumer of its real character, is permitted. It shall not be sold as butter, nor shall words like "dairy," "creamery," etc., or the name of any breed of dairy cattle, be used in connection with it. All packages ex-

posed for sale must be plainly marked "Oleomargarine," and labels similarly marked must accompany retail sales. Stores where it is sold and wagons used for delivery must display signs, and hotels, etc., using it must notify guests. Persons selling oleomargarine must be registered and conveyors licensed.

IMITATION CHEESE.—All articles in imitation of or intended as substitutes for cheese, not made exclusively of milk or cream, etc., must be plainly marked "Imitation cheese." Labels similarly marked must accompany retail sales.

MISCELLANEOUS.—Milk inspectors are appointed by the mayor and aldermen of cities and selectmen of towns. They are charged also with the inspection of imitation butter and cheese. Feeding garbage to milch cows is prohibited.

MICHIGAN.

DAIRY AND FOOD COMMISSIONER.—The dairy and food commissioner is appointed by the governor; term of office, two years; salary, \$1,200 per annum; must give bonds for \$10,000; shall appoint a deputy commissioner at \$1,000, and a chemist at not more than \$1,200 per year, and may appoint two clerks at \$60 per month each, six inspectors at \$3 per day, and an assistant chemist at \$1,000 per year. Authority extends to all food and drink products. Commissioner shall make detailed annual reports to the governor and issue popular monthly reports on foods, adulterations, etc. Annual appropriation, \$18,000.

MILK.—Milk standard, 12½ per cent. total solids, 3 per cent. fat, specific gravity between 1.029 and 1.033. *Skimmed milk.*—The specific gravity of skimmed milk must be between 1.032 and 1.037. It may be sold for what it is from cans plainly labeled "Skimmed milk." *Adulterated milk.*—The sale of adulterated, diseased, etc., milk to any person or its delivery to a factory is prohibited; milk from sick cows or those fed on distillery refuse, etc., is forbidden.

IMITATION BUTTER AND CHEESE.—Imitation butter and cheese shall not contain any poisonous or deleterious substances. Proprietors of butter and cheese factories purchasing milk from more than three persons shall register with the dairy and food commissioner. A registered brand, with a suitable device and the words "Michigan full-cream cheese," for use on full-cream cheese and their packages will be furnished for \$1 to factories applying to the commissioner. False brands are prohibited.

IMITATION BUTTER.—Any article not made wholly from milk or cream, and containing melted butter, fats, or oil not produced from milk, and which is in imitation of pure butter, is prohibited; but oleomargarine, free from color or any ingredient to cause it to look like butter, and made in such form and sold in such manner as will advise the consumer of its real character, is permitted; its sale as butter is prohibited; signs must be displayed where it is sold or used, and its original packages must be plainly marked "Oleomargarine" if the article contains suet or tallow, or "Butterine" if it contains lard; retail sales shall be made from a package so marked, and a label similarly printed and bearing the name of the manufacturer shall be delivered with each sale; shall not be used in any public institution.

IMITATION CHEESE.—Any article in semblance of pure cheese, containing melted butter or fats or oils not produced from milk, is prohibited.

MISCELLANEOUS.—The police commissioners of Detroit shall appoint an officer to act as milk inspector in that city; he shall inspect dairies, milk shops, etc., in Wayne County. Common councils or boards of trustees in cities and towns may appoint and fix the compensation of milk inspectors.

PURE FOOD.—An article of food is deemed adulterated when inferior substances have been mixed with it; when any valuable constituent has been abstracted; if it is in imitation of or sold as another article; if it is decomposed or from an unhealthy animal; if it is colored to conceal inferiority; if it contains any poisonous or injurious substances, etc.; with certain common exceptions, such articles are prohibited.

MINNESOTA.

DAIRY AND FOOD COMMISSIONER.—The dairy and food commissioner is appointed by the governor; term of office, two years; salary, \$1,800 per annum. He may appoint a secretary at a salary of \$1,200 per year, and appoint and fix the compensation of such assistants, chemists, agents, and counsel as are necessary; biennial reports are made to the legislature; his authority extends to other foods. Fifteen thousand dollars is annually appropriated for his work.

MILK.—Milk standard, 13 per cent. solids, 3½ per cent. fat. Persons receiving milk shipped by train or cars must empty the vessels before the milk is sour, and immediately clean them. *Cream.*—Cream standard, 20 per cent. fat. *Skimmed milk.*—Skimmed milk may be used for making skim cheese. Cans containing skimmed milk for sale must be plainly marked "Skimmed milk." *Adulterated milk.*—Unclean, unhealthy, adulterated, etc., milk includes that drawn from cows near the time of parturition, or fed on distillery waste, etc. (ensilage excepted); its sale or exchange or delivery to any factory, or its use for making cream or any food, is prohibited.

BUTTER.—Butter is defined as the product usually known by that name, and manufactured exclusively from milk or cream, or both; it shall not be falsely branded.

CHEESE.—At least 45 per cent. of the total solids of cheese must be fat. It shall not be falsely branded. A registered brand with a motto and the words "Minnesota state full cream cheese," for use on full cream cheese and their packages, is issued to factories upon application to the commissioner. *Skim cheese.*—Skim cheese is that below the standard for full cream cheese; it is permitted if the packages are plainly marked "Skim cheese;" a placard must be displayed where it is sold.

IMITATION BUTTER AND CHEESE.—Any article not made wholly from milk or cream, which is in imitation of and designed to take the place of pure butter or cheese, is prohibited; but such imitations of butter are permitted if colored bright pink. Butter made by any process by which casein and other ingredients of milk are made to replace pure fat shall be plainly marked "Patent butter," and a printed card stating its ingredients shall be given to each purchaser.

MISCELLANEOUS.—Milch cows shall not be kept in a crowded or unhealthy condition nor fed unwholesome food or any that produces impure milk.

Unless all the milk delivered is bought by a factory none of it shall be used by the operators for themselves without the consent of the owners; such factories shall keep a detailed account of their operations, open to the inspection of patrons.

Proprietors of factories, shippers of milk, and milk sellers shall make regular detailed reports to the commissioner. Milk dealers in towns of more than 1,000 inhabitants shall annually obtain from the commissioner, at the cost of \$1, a license giving certain information regarding the conduct of their business.

Any city council may provide for the inspection of milk, dairies, and herds supplying milk for its use.

MISSISSIPPI.

MILK.—(No law.)

BUTTER.—(No law.)

CHEESE.—(No law.)

IMITATION BUTTER.—Packages of oleomargarine or similarly manufactured butters shall be plainly labeled with the correct name of their contents, and the product shall be sold by that name. A privilege tax of \$5 is imposed upon persons selling the articles named.

IMITATION CHEESE.—(No law.)

MISCELLANEOUS.—It is unlawful to milk the cow of another, or to confine her with intent to take her milk, without the consent of the owner.

MISSOURI.

MILK.—(No law.)

BUTTER.—(No law.)

CHEESE.—Cheese made from milk testing at least 3 per cent. fat, or cream from the same, is deemed a full cream cheese. *Skim cheese*.—Any cheese not made from pure milk testing at least 3 per cent. fat, or cream from the same, shall be plainly branded "Skimmed milk cheese," or "Not full-cream cheese," and its true name given.

IMITATION BUTTER.—Imitation butter is defined as every article not produced wholly from pure milk or cream, made in semblance of and designed to be used as a substitute for pure butter; it shall not be sold as butter; shall not be colored to resemble butter unless it is to be sold outside the state; original packages shall be plainly stamped "Substitute for butter;" in hotels, etc., vessels in which it is served must be marked "Oleomargarine," or "Impure butter."

IMITATION CHEESE.—Any article not produced wholly from pure milk or cream and designed to take the place of cheese shall have its original packages stamped with its true name.

MISCELLANEOUS.—State board of agriculture is charged with enforcement of act relating to butter substitutes and cheese branding. Appropriation, \$5,000 for two years.

All cities and towns have power to license dairies, provide for inspection, etc.

MONTANA.

MILK.—(No law.)

BUTTER.—(No law.)

CHEESE.—(No law.)

IMITATION BUTTER AND CHEESE.—Any article in semblance of butter or cheese, and not made wholly from milk or cream, must be plainly labeled "Oleomargarine," or "Imitation cheese," and a printed label bearing the same word or words must be delivered to the purchaser with retail sales. Places where these articles are sold or used must display signs, and information as to their character be given if requested. Dealers must pay a license of 10 cents a pound on each pound sold.

MISCELLANEOUS.—Cows shall not be kept in unsanitary places, or fed food that produces unwholesome milk.

NEBRASKA.

MILK.—*Adulterated milk*.—The sale of adulterated, skimmed, diseased, or tainted milk, or its delivery to a factory, is prohibited.

BUTTER AND CHEESE.—No poisonous or deleterious matter shall be used in the manufacture of butter or cheese.

IMITATION BUTTER AND CHEESE.—Imitation butter and cheese are defined as any article made in semblance of and designed to be used as a substitute for pure butter or cheese, and not produced wholly from pure milk or cream, salt, rennet, and harmless coloring matter. These articles, including any having melted butter added to them, shall not be colored to resemble butter or cheese; shall be plainly marked "Imitation butter," or "Imitation cheese;" verbal and printed information of the character of the articles, and address of the maker, shall be given at time of sale; signs shall be displayed in public eating places where used.

MISCELLANEOUS.—Use of cream by employees of a factory, without permission of patrons, is prohibited.

PURE FOOD.—Any article of food or drink is deemed adulterated if any inferior or injurious substance has been mixed with it, if any valuable constituent has been removed, if it is in imitation of or sold as another article, if it is diseased, decomposed, infected, if it is colored to conceal inferiority, etc. With certain exceptions, which shall be labeled, such articles are prohibited.

NEVADA.

MILK.—*Skimmed milk.*—Skimmed milk may be sold as such.—*Adulterated milk.*—The sale or exchange of adulterated milk, or milk from cows which are improperly cared for, or fed "swill" or other decomposed matter is a misdemeanor.

BUTTER.—(No law.)

CHEESE.—(No law.)

IMITATION BUTTER.—Any article in semblance of butter but not made exclusively of milk or cream, or containing melted butter, shall be in packages plainly marked "Oleomargarine."

IMITATION CHEESE.—(No law.)

MISCELLANEOUS.—Milk inspectors are appointed and their compensation fixed by board of county commissioners. They shall inspect milk sold by venders and prosecute violations. Care of cows regulated.

NEW HAMPSHIRE.

MILK.—Milk standard, 13 per cent. solids. It shall be sold by wine measure, and the capacity of vessels shall be marked upon them. *Skimmed milk.*—Milk from which any cream has been removed can be sold only from vessels plainly marked "Skimmed milk." *Adulterated milk.*—The sale of adulterated, unwholesome, diseased, etc., milk, and that from cows fed on brewery refuse, etc., is prohibited.

BUTTER AND CHEESE.—"Butter" and "cheese" are understood to mean the products usually known by those names, and which are manufactured exclusively from milk or cream, with salt and with or without coloring matter, and, if cheese, with rennet.

IMITATION BUTTER AND CHEESE.—Any article not made wholly from unadulterated milk or cream, which is in imitation of pure yellow butter or cheese, is prohibited, unless in packages plainly marked "Adulterated butter," "Oleomargarine," or "Imitation cheese." A label printed with the words on the original package shall be delivered with each retail sale. Oleomargarine, free from color or ingredient to cause it look like butter, and made in such form and sold in such manner as will advise the consumer of its real character, is permitted. Notice of the use of substitutes for butter in hotels, etc., shall be given to patrons.

MISCELLANEOUS.—The mayor and aldermen of cities and the selectmen of towns may appoint and fix the compensation of milk inspectors. In towns having inspectors, all milk dealers must register and obtain, at the cost of 50 cents per year, a license which gives full details as to the conduct of their business. Inspectors are given special powers for making inspections of milk, butter, etc., and names of persons convicted of selling adulterated milk are published.

NEW JERSEY.

DAIRY COMMISSIONER.—Dairy commissioner is appointed by state board of health; term of office, three years; salary, \$2,000 per annum. He may appoint and fix the compensation of such assistants, chemists, agents, clerks, and counsel as are necessary. Expenses are limited to \$10,000 per year. An additional appropriation of \$1,000 is made for the enforcement of the pure-food law. Authority is extended to all foods and drugs.

MILK.—Milk standard, 12 per cent. solids. *Skimmed milk.*—Skimmed milk shall be sold only in or from cans plainly marked "Skimmed milk." In cities of the first class it is prohibited. *Adulterated milk.*—The sale of adulterated or unwholesome milk, or its delivery to a cheese factory, is prohibited. It is defined as any which has been adulterated by the addition of any substance, or any from cows poorly cared for or fed unwholesome foods, or that has been exposed to infection by diseased persons, etc.

BUTTER AND CHEESE.—The terms natural butter and natural cheese are taken to

mean the products usually so called, made exclusively from milk or cream, with salt and rennet and with or without coloring matter or sage. Each butter or cheese package must be branded with its weight and the name of the manufacturer.

IMITATION BUTTER AND CHEESE.—Any article made wholly or partly out of any fat, oil, etc., not from pure milk or cream, artificially colored in imitation of pure yellow butter, is prohibited; but oleomargarine and imitation cheese are permitted, if free from artificial color and in original package, encircled by a wide black band bearing the name of the maker and having the name of the contents plainly branded on them with a hot iron. Retail sales shall be accompanied by a printed card on which the name of the substance and the address of the maker are plainly printed, and the customer shall be orally informed of the character of the article at the time of sale.

MISCELLANEOUS.—It is unlawful for any person to use a milk can belonging to another and marked with the owner's name or initials without his consent. If they are so used and found, their contents may be emptied.

Cows shall be properly cared for and fed. Milch cows kept in towns shall be registered. State dairy commissioner shall be notified when any of them are supposed to be diseased.

PURE FOOD.—An article of food or drink is deemed to be adulterated if any inferior or injurious substance has been added to it, if any valuable constituent has been removed, if it is an imitation of or sold as another article, if it is diseased or decomposed, if it is colored to conceal inferiority, etc. With the exception of articles named by the board of health and ordinary articles of food, which shall be branded, such articles are prohibited.

NEW MEXICO.

MILK.—(No law.)

BUTTER.—(No law.)

CHEESE.—(No law.)

IMITATION BUTTER.—(No law.)

IMITATION CHEESE.—(No law.)

MISCELLANEOUS.—City councils shall provide for the inspection of dairy products.

PURE FOOD.—Any article of food or drink shall not be knowingly sold if it is unhealthy, or if any valuable constituent has been removed from it, or if it contains ingredients not asked for, unless notice is given to the purchaser. The use of an injurious coloring matter or any diseased or decomposed substance in the manufacture of food is prohibited.

NEW YORK.

COMMISSIONER OF AGRICULTURE.—Commissioner of agriculture is appointed by the governor; term of office, three years; salary, \$4,000 per annum. He may appoint assistant commissioners, chemists, clerks, agents, and counsel necessary for the work of his office and fix their compensation; also may appoint five expert butter and cheese makers to inspect factories, give instruction, etc.

MILK.—Milk standard, 12 per cent. solids, 3 per cent. fat. Pure milk is defined as sweet and unadulterated; pure cream is that taken from such milk. Milk shall not be kept in unclean vessels nor in unsanitary places. All cans, etc., containing milk to be sold in counties other than where produced, must be plainly branded with name of the county of production; vehicles from which it is sold must be similarly marked. Glass bottles are excepted from the provision, but they must bear the name of the vendor. *Skimmed milk.*—Skim milk may be delivered to skim-cheese factories, and except in New York and Kings counties, it may be sold as skimmed milk for use in the county where it is produced or an adjoining county. *Condensed milk.*—Condensed milk must be made from pure and wholesome milk, and its proportion of milk solids shall be in quantity the equivalent of 12 per cent. of milk solids in crude milk, of which 25 per cent. shall be fat. All packages of condensed milk shall be labeled with name of manufacturer, etc. *Adulterated milk.*—Adulterated milk is defined as any below the standard, or which has been

altered, or any from cows poorly cared for or fed certain unwholesome foods. Its sale, exchange, delivery to a butter or cheese factory, or use for any food is prohibited. Pure skim milk is excepted as above.

BUTTER AND CHEESE.—Butter and cheese are defined as the products of the dairy usually known by those terms, manufactured exclusively from pure unadulterated milk or cream, with or without salt, rennet, coloring matter, or sage. False brands are prohibited. County trade-marks may be adopted by county dairymen's associations. A registered brand, with the words "New York state full cream cheese," for use on full milk cheese and their packages, will be furnished to factories applying to the commissioner of agriculture. *Skim cheese.*—Pure skim cheese may be made from clean, pure skim milk.

IMITATION BUTTER AND CHEESE.—The terms oleomargarine, butterine, imitation butter, or imitation cheese mean any article in the semblance of butter or cheese not the usual product of the dairy and not made exclusively from unadulterated milk, or having any oil, lard, melted butter, etc., as a component part. *Imitation butter.*—The manufacture of oleomargarine or any article in imitation of butter wholly or partly from fats or oils not produced from milk, or the sale or the use in hotels, etc., of such articles, is prohibited. No article intended as an imitation of butter and containing oils, fats, etc., not from milk, or melted butter in any condition, shall be colored yellow. *Imitation cheese.*—The manufacture or sale of any article in imitation of pure cheese, into which any animal fat, oil, or butter, etc., is introduced, is prohibited.

MISCELLANEOUS.—Milch cows shall not be kept in an unsanitary condition nor be fed distillery waste, spoiled feeds, or any food that injures milk; silage is permitted.

Unless factory operator buys all the milk delivered, he shall not use any of it or its products without consent of the owners, and he must keep an account of all factory operations for the inspection of his patrons.

NORTH CAROLINA.

MILK.—(No law.)

BUTTER.—Butter is defined as the product manufactured from fresh and pure milk and cream.

CHEESE.—(No law.)

IMITATION BUTTER.—Oleomargarine and butterine are defined as articles manufactured in imitation of butter, and which are composed of any ingredient or ingredients in combination with butter. Original packages shall be labeled with chemical ingredients and their proportions.

IMITATION CHEESE.—(No law.)

MISCELLANEOUS.—District, county, and city attorneys shall prosecute offenders.

PURE FOOD.—An article of food or drink is deemed adulterated if any inferior or injurious substance has been added to it, if any valuable constituent has been removed, if it is an imitation of or sold as another article, if it is colored to conceal inferiority, if it is decomposed or unfit for food, etc.; with the exception of certain foods whose ingredients are known, such articles are prohibited.

NORTH DAKOTA.

DAIRY COMMISSIONER.—The state commissioner of agriculture and labor is ex-officio state dairy commissioner.

MILK.—(No law.)

BUTTER AND CHEESE.—Butter and cheese are defined as the products usually known by those names, and which are manufactured exclusively from milk or cream. Creameries and cheese factories shall brand each package of butter or cheese, giving quality of product, number of factory, etc. The brands are registered with the dairy commissioner.

IMITATION BUTTER.—Wholesale and retail packages of any article in semblance of butter, not made wholly from pure milk or cream, and containing melted butter, oils, or fats, etc., shall be plainly marked "Oleomargarine," "Butterine," or "Patent butter." Butter made by any process by which casein of

milk or other ingredients are made to take the place of pure fat shall be plainly marked "Patent butter." Sales of imitation butter shall be accompanied by a printed card giving the different ingredients.

IMITATION CHEESE.—Packages containing any substance designed to take the place of cheese, or in imitation of cheese, not produced wholly from pure milk, shall be stamped with the name of their contents. Sales of imitation cheese shall be accompanied by a printed card giving the different ingredients.

MISCELLANEOUS.—(No law.)

OHIO.

DAIRY AND FOOD COMMISSIONER.—State dairy and food commissioner is elected at the general elections; term of office, two years; salary, \$2,000 per year. He shall give bond for \$5,000. May appoint two assistant commissioners at salaries of \$1,000 per year; also appoint and fix the compensation of experts, chemists, agents, etc., as are necessary. Detailed annual report shall be made to the governor. Authority extends to all foods and drugs. Appropriation for 1898, \$42,600.

MILK.—Milk standard, 12 per cent. solids, 3 per cent. fat; in May and June, 11½ per cent. solids. *Skimmed milk.*—Skimmed milk shall not be sold as pure milk, but it may be used for making skimmed cheese; cans containing it shall be plainly marked "Skimmed milk." *Condensed milk.*—Condensed milk shall be made from pure fresh milk; the proportion of milk solids shall be equivalent to 12 per cent. in crude milk, of which 25 per cent. shall be fat; package containing same shall be plainly labeled with true name, brand, and name of manufacturer. *Adulterated milk.*—The sale of adulterated, skimmed, unclean, unhealthy, etc., milk, and that from sick cows, or its delivery to a factory, is prohibited.

BUTTER AND CHEESE.—Butter and cheese are defined as the products usually known by those names, and made wholly from pure milk or cream, with salt, and with or without harmless coloring matter, and, if cheese, with or without rennet and sage. *Butter.*—Standard for butter, 80 per cent. fat. *Cheese.*—Register brands with the words "Ohio state full cream cheese" are issued to factories for use on full milk cheese and their packages upon application to the dairy and food commissioner and payment of fee of \$1. *Skimmed cheese.*—Cheese as above defined, and containing less than 20 per cent. fat, shall be plainly marked, and have its package marked, "Skimmed cheese;" packages sold at retail shall be accompanied by a label similarly marked; exposed contents of a package shall be labeled as above with a placard, and a sign "Skimmed cheese sold here" shall be posted where it is sold; delivery wagons shall display similar signs; notice shall be given of its use in public eating places.

IMITATION BUTTER AND CHEESE.—With the exceptions noted below, any article in imitation of natural butter or cheese, and containing animal or vegetable oils not produced from milk, or acids, is prohibited. Any other substance not made wholly from pure milk or cream, salt, and harmless coloring matter, and appearing to be butter or cheese, may be sold only under its true name. Each roll or package shall be plainly marked with its name and the names of its ingredients, and the same shall be on a label delivered with each sale, in connection with which the use of such words as "butter," "dairy," etc., are prohibited; information as to the substance shall be given at all retail sales; it shall not be packed so as to be concealed by a finer grade of butter; its use in state charitable and penal institutes is prohibited. Signs shall be used as described below. *Oleomargarine.*—Oleomargarine is defined as any substance not pure butter of not less than 80 per cent. butter fat, and made for use as butter. It is permitted if free from coloring matter or other ingredient to cause it to look like butter, and made in such form and sold in such manner as will advise the consumer of its real character. *Filled cheese.*—Any article in imitation of cheese and not made wholly of milk or cream, etc., and containing any fats, oils, etc., not produced from milk or cream, shall be plainly marked, and have its package or the exposed contents of any package marked "Filled cheese;" each

retail sale shall be accompanied by a label similarly marked; it shall not be sold as cheese. *Signs.*—The signs "Oleomargarine sold here" or "Filled cheese sold here" shall be displayed wherever these articles are sold, and signs and verbal information are required in public eating places where the articles are used; wagons delivering filled cheese shall display signs.

MISCELLANEOUS.—Milch cows shall not be kept in a cramped or unhealthy condition, nor fed unhealthy food, or food which produces unwholesome milk. Keeping a false account of milk delivered to a factory is prohibited. False brands on dairy products or their imitations are prohibited.

PURE FOOD.—Any article of food or drink is adulterated, if any inferior or poisonous substance has been mixed with it, if any valuable ingredient has been removed, if it is an imitation of or sold under the name of another article, if it is decomposed, infected, or from a diseased animal, if it is colored to conceal inferiority, etc.; such articles are prohibited. But certain common mixtures are permitted if packages are labeled with names of ingredients, etc.

OKLAHOMA.

MILK.—*Adulterated milk.*—Milk from a cow not in proper condition of health, or any milk adulterated by water or a deleterious substance, or colored, shall not be sold or delivered.

BUTTER.—(No law.)

CHEESE.—(No law.)

IMITATION BUTTER.—(No law.)

IMITATION CHEESE.—(No law.)

MISCELLANEOUS.—(No law.)

PURE FOOD.—The adulteration of food or drink with fraudulent intent is a misdemeanor. Buyer shall be informed if provisions are diseased or unwholesome. Board of health shall destroy any impure article of food offered for sale.

OREGON.

DAIRY AND FOOD COMMISSIONER.—The dairy and food commissioner, who shall be well qualified in dairy matters, is elected by the legislative assembly; term of office, two years; salary, \$1,000 per year; shall enforce the law and give dairy instruction, and may appoint and fix compensation of one deputy in each county. Chemist of State Agricultural College shall make analyses. Annual appropriation for dairy commissioner, \$500.

MILK.—Milk standard, 12 per cent. volume of cream, 12 per cent. solids, 3 per cent. butter fat, specific gravity of 1.035 after the cream has been removed. *Adulterated milk.*—Adulterated milk shall be plainly marked as such; it is defined as any which is below the standard, or has been altered so as to reduce its quality. Impure milk is defined as the product of cows fed unwholesome foods, or near the time of parturition; it is prohibited.

BUTTER.—Butter standard, not more than 14 per cent. water.

CHEESE.—(No law.)

IMITATION BUTTER AND CHEESE.—Adulterated butter or cheese is any which is below the standard; or has been altered so as to reduce its quality, or any article in imitation of or sold under the name of butter or cheese; it shall be plainly marked, and printed notice shall be given when it is used in public eating places. Salt and annatto or butter color in which annatto is the principal ingredient, are not adulterants of dairy products. Dealers in oleomargarine or any imitation dairy product shall keep a record of all sales.

MISCELLANEOUS.—Milch cows shall be allowed 800 cubic feet of air space each, in stables; rows facing each other shall not be closer than 6 feet. Stables shall be ventilated and kept in a healthful condition. Manufacturers of dairy products shall make detailed quarterly reports to the food commissioner. The boxes of any creamery or dairy shall not be used for selling the butter of another creamery or dairy.

PENNSYLVANIA.

DAIRY AND FOOD COMMISSIONER.—The dairy and food commissioner, who shall have practical experience in the manufacture of dairy products, is appointed by the governor; term of office, four years; salary, \$2,500 per year. He shall have a clerk, appointed by the governor; salary, \$1,500 per year. Authority extends to other foods. Commissioner shall make a detailed annual report.

MILK.—Milk standard, in cities of the second and third class, 12½ per cent. solids, 3 per cent. fat, specific gravity at 60 degrees F. between 1.029 and 1.033. In towns of over 1,000 population, vehicles from which milk is vended shall be marked with names of vendors and locality of production; and in cities of the second class, dairies and milk depots shall be registered by the bureau of health. *Skimmed milk.*—Skimmed milk standard, in cities of the second and third class, 6 per cent. cream by volume, 2½ per cent. fat by weight, specific gravity at 60 degrees F. between 1.032 and 1.037; milk from which any cream has been taken shall not be sold unless in a vessel plainly marked "skimmed milk." *Adulterated milk.*—The sale of adulterated, impure, or unwholesome milk is a misdemeanor. The addition of water or ice to milk is an adulteration, and milk from animals fed on distillery waste, or any substance in a state of putrefaction, or from sick or diseased cows, is declared to be impure and unwholesome. The sale of milk for human consumption, which contains boracic acid salt, salicylic acid, or other drug, is prohibited.

BUTTER.—(No law.)

CHEESE.—All cheese is divided into five grades, and each cheese and its package shall be plainly branded with the address of the maker, and the words "Full cream" if it contains not less than 32 per cent. of butter fat; "Three-fourths cream" if it contains not less than 24 per cent. butter fat; "One-half cream" if it contains not less than 16 per cent. butter fat; "One-fourth cream" if it contains not less than 8 per cent. butter fat; and "Skimmed cheese" if it contains less than 8 per cent. butter fat. Fancy cheese weighing less than five pounds, and pot cheese, are excepted.

IMITATION BUTTER AND CHEESE.—The manufacture or sale of any imitation, or adulterated butter or cheese, or any oleaginous substance not produced from pure milk or cream and designed to take the place of butter or cheese, is prohibited. These articles shall not be used in any state, charitable, or penal institution.

MISCELLANEOUS.—Councils of cities and boroughs may provide for milk inspection.

PURE FOOD.—An article of food or drink is deemed adulterated if any inferior or injurious substance has been mixed with it, if any valuable constituent has been removed, if it is in imitation of or sold as another article, if it is diseased, decomposed, infected, if it is colored to conceal inferiority, etc. With certain exceptions which shall be labeled such articles are prohibited.

RHODE ISLAND.

MILK.—Milk standard, 12 per cent. solids, 2½ per cent. fat; shall be sold by wine measure; vessels to be sealed by the sealer of weights and measures. *Skimmed milk.*—Skimmed milk is that which has been skimmed, or is below the standard; it shall be sold only from cans plainly marked, "Skimmed milk." *Adulterated milk.*—The sale or exchange of adulterated or diseased milk, or that from diseased cattle, or cows fed on distillery refuse, etc., is prohibited.

BUTTER.—All butter tubs shall be marked with their weights, and maker's initials.

CHEESE.—(No law.)

IMITATION BUTTER.—Any article not made wholly from milk or cream, but containing any melted butter or animal oil or fat not the product of milk, shall

be plainly marked "Oleomargarine," and a label similarly printed shall be delivered with all retail sales.

IMITATION CHEESE.—(No law.)

MISCELLANEOUS.—The mayor and alderman of any city and the council of any town may elect and fix the compensation of milk inspectors. In Providence this is compulsory. Inspectors may appoint collectors of samples. All persons engaged in selling milk must register with the inspector and have their names on their wagons, etc. The authority of inspectors extends to other foods. Names of persons convicted are published.

SOUTH CAROLINA.

MILK.—Milk standard, 3 per cent. fat, $8\frac{1}{2}$ per cent. other solids. *Skimmed milk*.—Skimmed milk is that below the standard; it and buttermilk may be sold under their own name. *Adulterated milk*.—The sale of unclean, diseased, adulterated, etc., milk, or its delivery for domestic use, or to be converted into any human food, is prohibited.

BUTTER.—(No law.)

CHEESE.—(No law.)

IMITATION BUTTER AND CHEESE.—Imitation butter and cheese are defined as every article not produced from pure milk or cream, with or without salt, rennet, and harmless coloring matter, which is in semblance of and designed to be used as a substitute for butter or cheese; they shall not be colored to resemble butter or cheese; original packages shall be marked "Substitute for butter," or "Substitute for cheese;" shall not be sold as genuine butter or cheese, nor used in hotels, etc., unless signs are displayed.

MISCELLANEOUS.—Statement of the chemist of the state college shall be accepted as evidence of analysis of imitation butter and cheese.

SOUTH DAKOTA.

MILK.—*Adulterated milk*.—The sale of unwholesome, diseased, or adulterated milk as the pure article is prohibited.

BUTTER AND CHEESE.—Butter and cheese are defined as the products usually known by those names, and which are made wholly from milk or cream or both, with salt and rennet, and with or without coloring matter.

IMITATION BUTTER.—Any article not made wholly from pure milk or cream, and in imitation of pure butter, is prohibited; but oleomargarine, colored pink, and made in such form and sold in such manner as will advise the consumer of its real character, is permitted; notice of its use in public eating places must be given.

IMITATION CHEESE.—(No law.)

MISCELLANEOUS.—Health officers, sheriffs, etc., shall institute complaints, etc.

PURE FOOD.—Any article of food or drink which is diseased or unwholesome, or fraudulently adulterated or colored, for gain, is prohibited, unless plainly labeled, etc.

TENNESSEE.

MILK.—(No law.)

BUTTER.—(No law.)

CHEESE.—(No law.)

IMITATION BUTTER.—Any article which is in imitation of yellow butter and not made exclusively from pure milk or cream is prohibited; but oleomargarine, free from color or other ingredient to cause it to look like butter, and made in such form and sold in such manner as will advise the consumer of its true character, and other imitations if uncolored and labeled with their correct names, are permitted; wholesale packages shall be plainly labeled, and a label shall accompany retail sales.

IMITATION CHEESE.—Imitation cheese may be manufactured under its true name; each package and its contents shall be stamped with the correct name, and a label, similarly printed, shall be delivered with retail sales.

MISCELLANEOUS.—(No law.)

PURE FOOD.—Any article of food or drink is adulterated if inferior substances have been added to it; if any valuable constituent has been abstracted; if it is an imitation of or sold as another article; if it contains any poisonous substance; if it is decomposed or diseased or from an unhealthy animal, etc. With certain common exceptions, such articles and all misbranded articles are prohibited.

TEXAS.

(No dairy laws.)

UTAH.

MILK.—*Adulterated milk*.—The sale or exchange of unclean, impure, etc., milk, or its use for making any kind of food, is prohibited.

BUTTER.—(No law.)

CHEESE.—(No law.)

IMITATION BUTTER AND CHEESE.—Any article in semblance of butter or cheese, and not made wholly from milk or cream, shall be plainly marked "Oleomargarine butter," or "Imitation cheese," and retail sales shall be made from packages so marked. Such articles shall not be colored to resemble butter or cheese.

MISCELLANEOUS.—(No law.)

VERMONT.

MILK.—Milk standards, 12½ per cent. solids, 9¼ per cent. solids not fat; in May and June, 12 per cent. total solids. Standard measure is wine measure. *Adulterated milk*.—The sale of adulterated or skim milk, or milk below the standard, or its delivery to a factory, or the delivery of tainted milk to a factory, is prohibited.

BUTTER AND CHEESE.—Butter or cheese shall not be marked "Creamery," unless made in a creamery; marking "Private creamery" is permitted if name of maker is also given. *Butter*.—Butter is defined as the product usually known by that name, and made wholly from milk or cream, with or without salt or coloring matter.

IMITATION BUTTER OR CHEESE.—The manufacture of any article in imitation of butter or cheese which contains any animal fat, or animals or vegetable oils or acids not produced from pure milk or cream, is prohibited. *Imitation butter*.—Imitation butter for use in public eating places, or for sale, shall be colored pink.

MISCELLANEOUS.—Payment for milk at factories is to be based on milk testing 4 per cent. fat. Result of analysis by State Agricultural Experiment Station shall be deemed competent evidence in prosecutions. Operators of factories shall not use any cream from the milk delivered to them, except with consent of owners.

VIRGINIA.

MILK.—*Adulterated milk*.—The sale of adulterated, skimmed, tainted, etc., milk, or its delivery to any creamery or cheese factory, is prohibited.

BUTTER.—Butter inspectors shall brand lots of butter offered for inspection according to quality.

CHEESE.—*Skimmed cheese*.—Skimmed cheese may be made from pure skimmed milk.

IMITATION BUTTER.—The manufacture or sale of any article made wholly or partly from any fat or oil not produced from unadulterated milk or cream, and which is in imitation of pure yellow butter, is prohibited; but oleomargarine, butterine, or kindred compound, made in such form and sold in such manner as will advise the consumer of its real character, and free from color or other ingredient to cause it to look like butter, is permitted. Signs, with

- the words "Imitation butter used here," shall be displayed in eating places, bakeries, etc., where the articles above named are used.
- IMITATION CHEESE.**—The manufacture or sale or use in public eating places, of any article in imitation of and designed to take the place of pure cheese, and not made wholly from milk or cream, is prohibited.
- MISCELLANEOUS.**—Factory employees shall not use cream without the consent of its owners.

WASHINGTON.

- DAIRY COMMISSIONER.**—Dairy commissioner is appointed by the governor; term of office, four years; salary, \$1,200; must give bond for \$5,000. He may appoint deputies at \$3 per day when necessary; the services of chemists of state institutions are available; other chemists may be employed when necessary. Appropriation, \$3,000 per year. A state board of dairy commissioners, ex-officio, is constituted of the secretary of state, president of the agricultural college, and dairy commissioner. Members receive no salary, but are allowed traveling expenses. They report to the governor biennially.
- MILK.**—Milk standard, 3 per cent. fat, 8 per cent. solids not fat. *Adulterated milk*—Adulterated, skimmed, diseased, impure, etc., milk is defined as any below the standard, or which has been altered in any way, or is from cows diseased, poorly cared for, or fed unwholesome foods, or has been exposed to infection by disease germs, or has borax or salicylic acid added to it to prevent souring, etc. It shall not be sold as pure milk.
- BUTTER.**—(No law.)
- CHEESE.**—All cheese made by Cheddar process shall be branded with the name and location of factory, and the words "Washington full cream," if made wholly from pure milk and containing at least 30 per cent. fat; "Half skimmed," if containing at least 15 per cent. butter fat and made from milk from which not more than one-half the cream has been extracted; or "Skimmed," if made from pure skimmed milk. All cheese shipped from other states must be branded to indicate its quality, as above.
- IMITATION BUTTER.**—No article which is in imitation of pure yellow butter and is not made wholly from pure milk or cream, with or without harmless coloring matter, shall be manufactured, sold, or used in any public eating house or eleemosynary or penal institution, etc., but oleomargarine, free from color or other ingredient to make it look like butter, and made in such form and sold in such manner as will advise the consumer of its real character, is permitted.
- IMITATION CHEESE.**—Any cheese not made from pure milk or cream or skimmed milk, with salt, rennet, and harmless coloring matter, is prohibited.
- MISCELLANEOUS.**—A record of the operations of every butter and cheese factory and private dairy (of 20 cows or more) where butter or cheese is made shall be kept and always open to the inspection of the dairy commissioner or any patron.

WEST VIRGINIA.

- MILK.**—*Skimmed milk.*—Skimmed milk may be used in the manufacture of cheese.
- BUTTER AND CHEESE.**—Salt, rennet, and harmless coloring matter are permitted in the manufacture of butter and cheese.
- IMITATION BUTTER AND CHEESE.**—Any substance in semblance of butter or cheese, and not made wholly from pure milk or cream, and packages containing such substances, shall be plainly marked; printed statements explaining the character of the substance must be given to consumers. *Oleomargarine.*—Oleomargarine and artificial and adulterated butter shall be colored pink.
- MISCELLANEOUS.**—(No law.)
- PURE FOOD.**—The adulteration of any article of food or drink is a misdemeanor.

WISCONSIN.

- DAIRY AND FOOD COMMISSIONER.**—Dairy and food commissioner is appointed by the governor; term of office, two years; salary, \$2,500 per annum. He may appoint an assistant commissioner at a salary of \$1,600, a chemist at \$1,800, and a clerk at \$900 per annum; also an inspecting agent at \$3 per day. Authority extends to all foods and medical drugs. Laboratory for all analytical work is provided. Commissioner shall make biennial reports, issue brands to cheese factories, enforce measures for cleanliness of dairies, factories, etc.
- MILK.**—Milk standard, 3 per cent. fat and pure. Milk for city trade must be produced from healthy cows fed wholesome food. Barns, stables, etc., must be clean. *Adulterated milk.*—The sale of adulterated, diseased, etc., milk, or its delivery to a factory, is prohibited. Boracic and salicylic acids and injurious antiseptics are prohibited. Standard tests may be made for proving adulteration.
- BUTTER.**—Use of boracic and salicylic acids and injurious antiseptics in the manufacture of butter are prohibited.
- CHEESE.**—Unlawful to use false brands on cheese. Brand, with the words "Wisconsin full-cream cheese," is issued to factories upon application to dairy commissioner. *Skimmed cheese.*—Skimmed cheese must be 10 inches in diameter and 9 inches high, and stamped "Wisconsin skimmed cheese."
- IMITATION BUTTER.**—Any article made partly or wholly out of any fat or oil, etc., not from pure milk or cream, and in imitation of yellow butter, is prohibited; but oleomargarine, free from color or other ingredient to make it look like butter, and made in such form and sold in such manner as will advise the consumer of its real character, is permitted. It shall not be sold as butter. All packages exposed for sale must be plainly marked "Oleomargarine;" signs must be displayed in selling places and on wagons. Hotels, etc., using it must notify guests. Use not permitted in charitable or penal institutions.
- IMITATION CHEESE.**—Manufacture or sale of cheese made from skimmed milk with the addition of fat foreign to milk is prohibited.
- MISCELLANEOUS.**—Wholesome food shall be fed to cows producing milk for retail sale. Account of daily operations must be posted in butter and cheese factories.
- PURE FOOD.**—Any article of food or drink shall be deemed adulterated if any injurious or inferior substance has been added to it; if any valuable ingredient has been removed; if it is an imitation of or sold as another article; if it is diseased, infected, decomposed; if it is colored to conceal inferiority, etc. With the exception of certain ordinary foods, which shall be plainly labeled, such articles are prohibited.

(No dairy laws.)

WYOMING.

CANADA.

(For full text of law, see p. 703.)

LIST OF CONVICTIONS.

CONVICTIONS FOR SALE OF ADULTERATED MILK.

1896.	
Nov. 19	Andrew Niefnicker .....\$10 and costs
Nov. 25	John E. Pfund.....\$10 and costs
1897.	
May 22	O. M. Nelson, Amos .....\$25 and costs
May 4	F. Wilkins, Fairfield 25 and costs
May 25	L. E. Hildreth, Stoughton..... 10 and costs
June 22	Phillip King, Fond du Lac..... 25 and costs
Aug. 17	Nelson Rust, Monroe..... 25 and costs
Aug. 24	Jer. Goodman, Monroe..... 25 and costs
Aug. 24	G. Hueber, Monroe 25 and costs
Aug. 31	Geo. Drege, Monroe 25 and costs
Sept. 1	Jas. Klinka, Hartford 25 and costs
Sept. 2	Jno. Shafer, Hartford 25 and costs
Sept. 3	Ludwig Esselman, Hartford 25 and costs
Sept. 16	Otto Nienow, Hartford 25 and costs
Sept. 20	Wm. Plantikow, Monroe 25 and costs
Sept. 25	Chas. Rohm, Appleton 25 and costs
Sept. 25	Fred Schulz, Appleton 25 and costs
Sept. 28	Louis Doeringfeld, Fennimore..... 25 and costs
Oct. 23	Louis Duhm, Appleton 25 and costs
Oct. 23	Wm. Ganin, Appleton 25 and costs
1898.	
Feb. 23	*G. Goll,, Milwaukee 25 and costs
Feb. 23	*W. Loase, Milwaukee 25 and costs
Feb. 23	*A. Sahr, Milwaukee 25 and costs
Mar. 22	C. Bart (milk from diseased cow), Milwaukee..... 50 and costs
May 17	C. L. Dana (adult. with "Freezine"), Milwaukee..... 25 and costs
July 12	Fred Gruening, Wautoma..... 25 and costs
July 12	Wm. Klotsbicker, Wautoma 25 and costs
July 19	Mrs. Mary Messerschmidt, Mt. Vernon 25 and costs
July 26	E. Lingenfelter, Fond du Lac..... 25 and costs
July 26	S. F. Block, Fond du Lac..... 25 and costs
Sept. 28	Herman Vetter, Fond du Lac..... 25 and costs

CONVICTIONS FOR SALE OF ADULTERATED VINEGAR.

1896.		
Oct.	*D. D. Evans & Co., Milwaukee	\$10 and costs
1897.		
Mar.	*Adolph Rosenheim, Milwaukee	10 and costs
Mar.	*C. Rostad, Milwaukee	10 and costs
Mar.	*Albert Heath, Milwaukee	10 and costs
April	Eugene Schrottky, Appleton	10 and costs
April.	John Walsh, Appleton	10 and costs
April.	H. Rademacher, Appleton	10 and costs

*Sentence suspended.

April.	C. A. Devener, Appleton	10 and costs
April.	Geo. Lausmann, Appleton	10 and costs
April.	Ingold Bros., Appleton	10 and costs
April.	Marugg & Briese, Appleton	10 and costs
April.	L. C. Schmidt, Berlin	10 and costs
April.	B. D. Fuller, Berlin	10 and costs
April.	Fred W. Leskey, Berlin	10 and costs
April.	Chas. Brunk, Berlin	10 and costs
April.	J. C. Briske, Berlin	10 and costs
June.	C. Nelson, Eau Claire	10 and costs
June.	F. N. Larson, Eau Claire	10 and costs
June.	F. Decremer, Green Bay.....	10 and costs
June.	W. W. Winegard, Green Bay.....	10 and costs
June.	Edw. Vanden Braak, Green Bay.....	10 and costs
June.	Carl Koch, Menasha	10 and costs
June.	John Planner, Menasha	10 and costs
June.	F. W. Bublitz, Menasha	10 and costs
Sept.	C. N. Hawley, La Crosse	10 and costs
Sept.	A. M. Watson, La Crosse	10 and costs
Sept.	Bergoust Groc. Co., La Crosse.....	10 and costs
Sept.	John C. Toeller, La Crosse	10 and costs
Sept.	F. Gregory, La Crosse	10 and costs
Nov.	Wenzel Grams, La Crosse	10 and costs
Nov.	**Adolph Radtke, Beaver Dam	10 and costs
1898.		
Feb.	*J. Roehl & Son, Milwaukee	10 and costs
Feb.	*W. Weickhart, Milwaukee	10 and costs

COLORED OLEOMARGARINE.

1897.		<i>Fine.</i>
June 23	W. M. Jones, Oconomowoc.....	\$50 and costs
Dec. 3	Wm. Orlebeke, Milwaukee.....	50 and costs
Dec. 4	*S. Townsend, Milwaukee	50 and costs
Dec. 4	*C. W. Howard, Milwaukee.....	50 and costs
Dec. 22	John McGavock, Milwaukee	50 and costs
1898.		
Jan. 4	Edward McGrath, Milwaukee	50 and costs
Jan. 4	A. Hoffman, Milwaukee	50 and costs
Jan. 13	J. A. Flom (Flom's hotel), Madison.....	50 and costs
Jan. 13	Michael Meyers, Madison.....	50 and costs
Jan. 13	G. E. Fess, Madison.....	50 and costs
Jan. 13	Chas. Elver, Madison.....	50 and costs

ADULTERATED LEMON EXTRACT.

1898.		<i>Fine.</i>
June 9	*David Dickson, Milwaukee.....	\$25 and costs
July 22	*Chas. Levison, Racine	25 and costs
Aug. 12	J. Kaiser, Madison	30 and costs
Oct. 24	*J. Michelstetter, Milwaukee	Fine suspended

MISCELLANEOUS CONVICTIONS.

Mch. 30, '98,	I. Karger, Milwaukee, adulterated honey.....	Sentence suspended
1898.		<i>Fine.</i>
Feb. 16	A. R. Nitz, Milwaukee, unlabeled alum bak. powder.....	\$25 and costs
Feb. 16	W. G. Beech, Milwaukee, unlabeled alum bak. powd.....	25 and costs
June 9	*David Dickson, Milwaukee, unlabeled lum bak. powd.....	25 and costs
July 22	*Chas. Levison, Racine, unlabeled alum bak. powd.....	25 and costs
Aug. 12	J. Kaiser, Madison, unlabeled alum bak. powd.....	25 and costs
Aug. 30	*H. Uvaas, Neenah, adult. cream tartar.....	25 and costs

*Sentence suspended. **Remitted.

FINANCIAL STATEMENT.

DAIRY AND FOOD COMMISSION.

DISBURSEMENTS FOR THE YEAR ENDING SEPTEMBER 30, 1897.

<i>Dairy and Food Commissioner's Dept.—</i>		
Adams, H. C., com'r, salary.....	\$2,496 00	.....
Adams, H. C., com'r, expenses.....	99 20	.....
Chadwick, W. W., asst. com'r, salary.....	1,750 00	.....
Chadwick, W. W., asst. com'r, expenses.....	672 78	.....
Mitchell, A. S., chemist, salary.....	1,800 00	.....
Mitchell, A. S., chemist, expenses.....	60 43	.....
Field, N. J., dairy inspector, per diem, and expenses	370 60	.....
Norton, F., stenog. and confidential clerk, salary....	225 00	.....
Democrat Pr't'g' Co., blanks.....	33 47	.....
Democrat Pr't'g' Co., report.....	1,699 00	.....
Madison Post Office, postage.....	110 00	.....
Madison Post Office, box rent.....	8 00	.....
Dane Co. Telephone Co., rental.....	24 00	.....
Wis. Telephone Co., messages.....	32 50	.....
Western Union Telegraph Co., telegrams.....	21 95	.....
American Express Co., expressage.....	124 54	.....
United States Express Co., expressage.....	93 31	.....
<i>Laboratory—</i>		
Sargent, E. H., & Co., laboratory supplies.....	\$50 01	.....
Williams, E., laboratory supplies.....	75	.....
Drake Bros., laboratory supplies.....	1 65	.....
Eissfeldt, C., Co., laboratory supplies.....	7 00	.....
Hollister, A. H., laboratory supplies.....	10 46	.....
Madison Gas & Electric Co., laboratory supplies....	9 81	.....
Elmer & Amend, laboratory supplies.....	75 00	.....
Hennecke, C., Co., laboratory supplies.....	2 35	.....
Baumbach, C., Co., laboratory supplies.....	9 40	.....
		\$9,787 21

DISBURSEMENTS FOR THE YEAR SEPTEMBER 30TH, 1898.

<i>Dairy and Food Commissioner's Department—</i>		
Adams, H. C., com'r, salary.....	\$2,511 00	.....
Adams, H. C., com'r, expenses.....	148 45	.....
Chadwick, W. W., asst. com'r, salary.....	1,600 00	.....
Chadwick, W. W., asst. com'r, expenses.....	765 13	.....
Mitchell, A. S., chemist, salary.....	1,800 00	.....
Norton, F., stenog. and clerk, salary.....	900 00	.....
Olin, J., attorney fees.....	14 00	.....
Field, N. J., dairy inspector, per diem and expenses.	1,563 30	.....
Democrat Prtg. Co., prtg. blanks.....	53 84	.....
Madison Post Office, postage.....	139 00	.....
Madison Post Office, box rent.....	8 00	.....
Dane Co. Telephone Co., rental.....	24 00	.....
Wisconsin Telephone Co., messages.....	2 75	.....
Western Union Telegraph Co., telegrams.....	26 55	.....
American Express Co., expressage.....	77 27	.....
United States Express Co., expressage.....	67 72	.....
Laboratory :		
Vilas, Wm. F., rent.....	\$250 00	.....
Richards & Co., Ltd., mdse.....	64 98	.....
Madison Gas and Electric Co.....	19 12	.....
Sargent, E. H., & Co.....	5 58	.....
Sheehan & Co.....	2 55	.....
Hollister's Pharmacy	3 99	.....
Williams, E.....	3 95	.....
Eimer & Amend.....	40 17	.....
Hussey, J.....	5 00	.....
Drake Bros. Co.....	4 35	.....
		\$10,100 70



INDEX.

	Page.
Letter of Transmittal.....	3
Dairy and Food Laws.....	5
Report of the Commissioner.....	34
Butter	36
Oleomargarine	37
Dairy Inspection	39
The Pure Food Law.....	40
Circular to manufacturers and dealers in foods and drugs in Wisconsin	42,
Law prohibiting the adulteration of foods and drugs.....	42
Factory and creamery inspection.....	46
Court proceedings	47
Report of the Chemist.....	48
Milk	48
Wisconsin curd test	49
Improvised curd test	52
How to make a test	52
Interpretation of results	53
Conclusion	54
Butter and oleomargarine	57
Butter colors	59
Analysis of butters and butter colors.....	60
Cheese	62
Vinegar	62
Analysis of vinegar	64
Honey	75
Syrups	76
Flavoring extracts	77
Lemon extracts	77
Optical constants of essential oils.....	78
Lemon extracts examined	82
Vanilla extracts	83
Cream of tartar	83
Cream of tartar analyses.....	84
Baking powder	84

	Page.
Report of Chemist—Continued.	
Flour	87
Coffee	88
Mustard	88
Spices	90
Drugs	90
Preservatives	90
Miscellaneous	91
Waters	92
Water analyses	92
Factory and City Milk Tests.....	105
Report of Dairy Inspector, N. J. Field.....	134
List of Creameries and Cheese Factories in Wisconsin, 1898—	
Cheese factories	153
Creameries	182
Michigan supreme court decision.....	201
Abstract of the Dairy and Food Laws of the United States.....	204
Abstract of the dairy and food laws of the various states alpha- betically arranged	204-223
List of convictions	224
Financial statement	226